



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

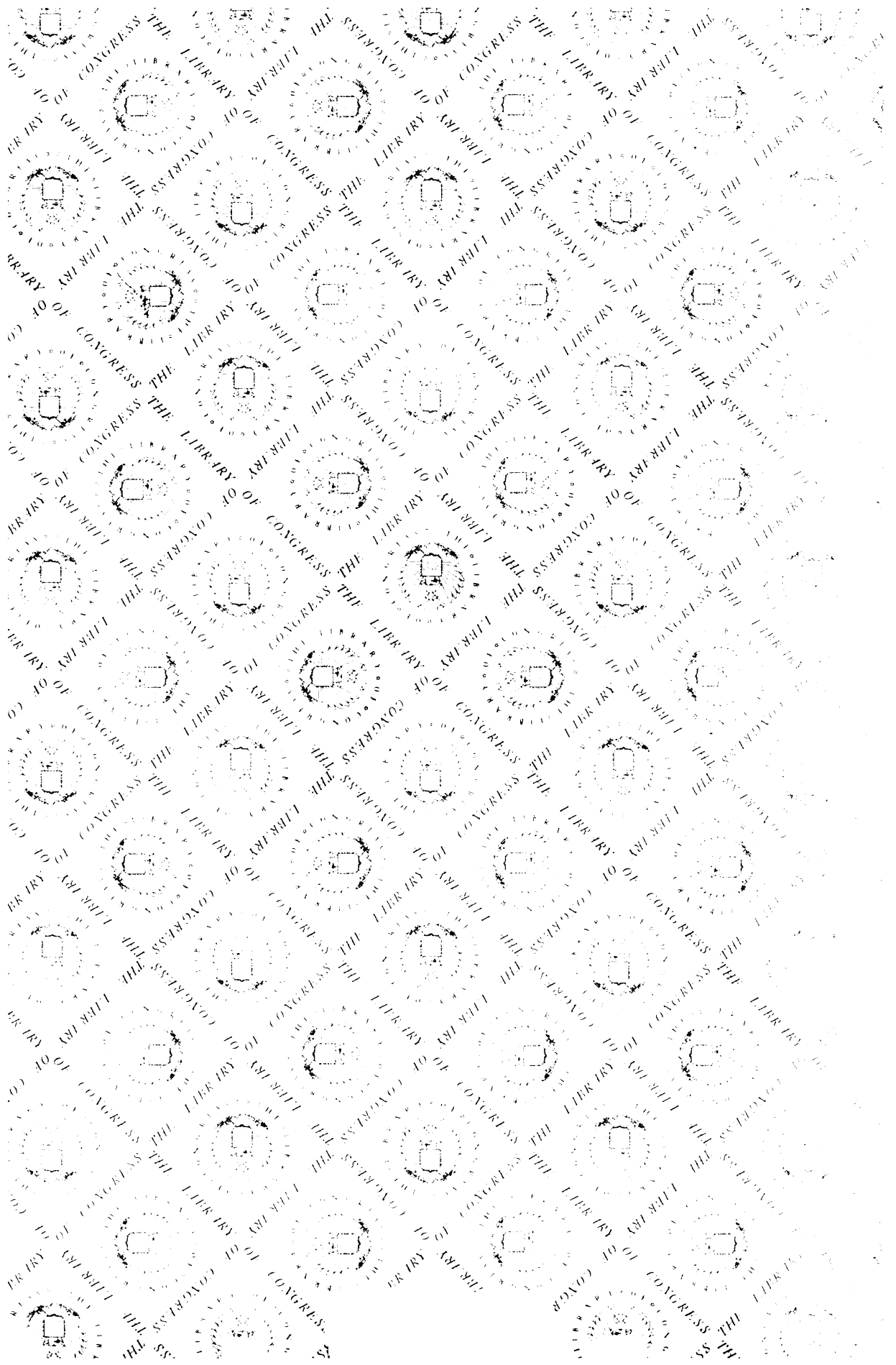
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



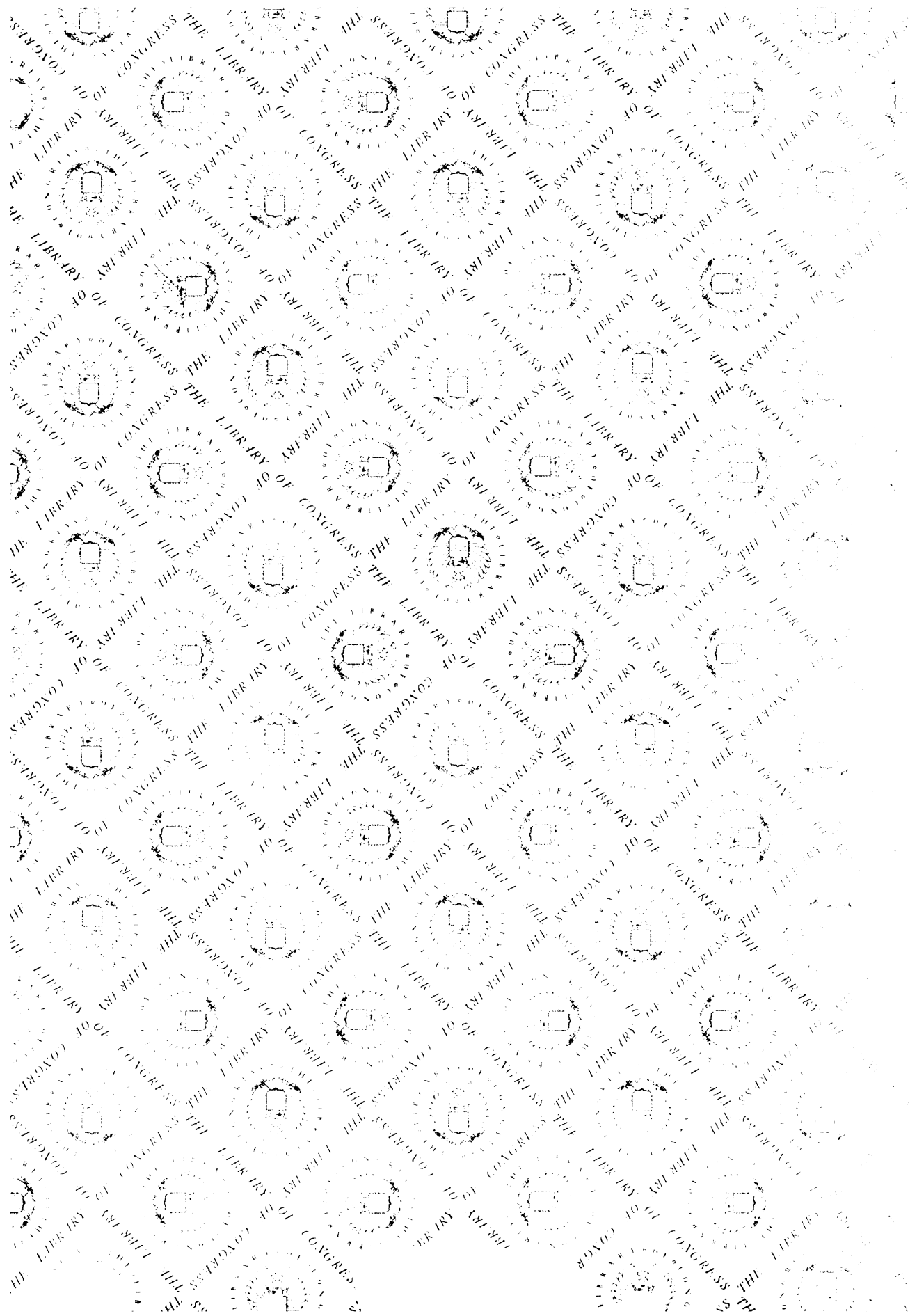


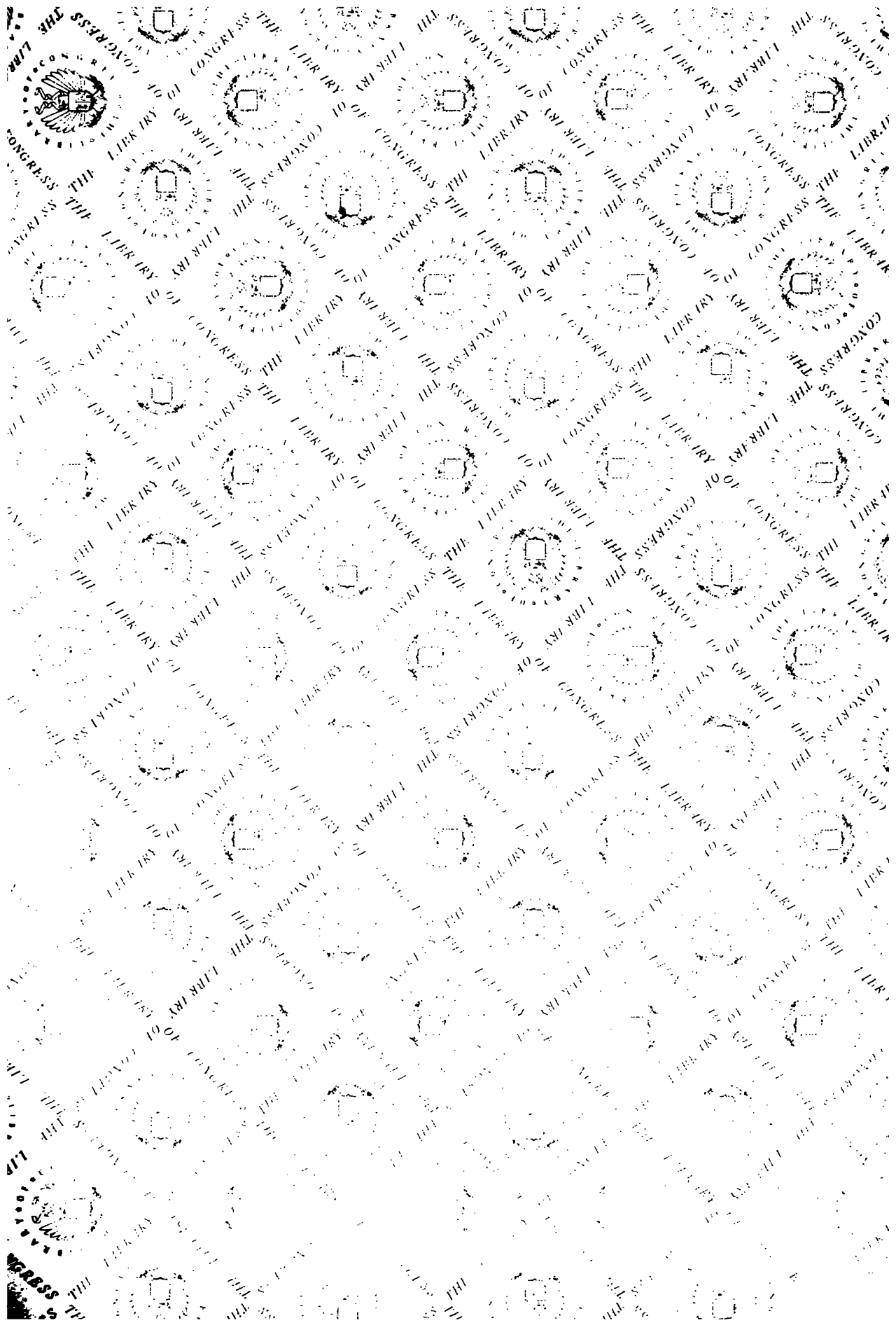
This One



2R5Z-CEA-5U9Z

start: 12:20 pm





THE
JOURNAL OF HORTICULTURE,
COTTAGE GARDENER,
 AND
COUNTRY GENTLEMAN.

**MAGAZINE OF GARDENING, RURAL AND DOMESTIC ECONOMY, BOTANY AND •
 NATURAL HISTORY.**

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

THE FRUIT AND KITCHEN GARDENS, by Mr. J. Robson, Gardener to Viscount Holmesdale, M.P., Linton Park; and Mr. T. Weaver, Gardener to the Warden of Winchester College.

THE FLOWER GARDEN, by Mr. D. Thomson, Archerfield Gardens; and Mr. G. Abbey, Horton Hall.

STOVE, GREENHOUSE, AND WINDOW GARDEN, by Mr. E. Fish, Gardener to Colonel Sowerby, Putteridge Bury, near Luton.

FLORISTS' FLOWERS AND FLORICULTURE, by the Rev. H. H. Dombrain.

GARDENING CALENDAR, by Mr. William Keane.

POULTRY-KEEPING, by Mr. J. Bally, Rev. W. W. Wingfield, E. Hewitt, Esq., and other well-known contributors.

BEE-KEEPING, by H. Taylor, Esq.; "A Devonshire Bee-keeper;" "B & W.;" and Mr. S. Bevan Fox.

HOUSEHOLD ARTS, by the Authors of "My Flowers," and others.

14
 9296



VOLUME V., NEW SERIES.

VOL. XXX., OLD SERIES.

LONDON:
PUBLISHED FOR THE PROPRIETORS, 162, FLEET STREET.

1863.

S3
J9

LONDON:

PRINTED AT THE JOURNAL OF HORTICULTURE OFFICE,
17, JOHNSON'S COURT, FLEET STREET.

INDEX.

ABERDEENSHIRE, GARDENS IN, 168
 Abergavenny Poultry Show, 301
 Accia grandis not flowering, 360
 Acclimatisation in the antipodes, 524
 Achimenes, wintering, 338
 Adelaster albiventer culture, 439
 Adenium obesum, 471
 Aechmea culture, 391
 Agaricus fertilis, poisonous, 395
 Agave lurida, 191
 Agricultural Hall Flower and Fruit Show, 162, 185; Poultry Show, 176
 Aldborough and Boroughbridge Poultry Show, 157
 Alexandra Park Exhibition, 66, 82
 Allamas, 249
 Allamanda nerifolia, treatment of, 518
 Allium fragrans, 259
 Allocasia—metallica from eyes, 9; metallica culture, 214; Lowii culture, 319; macrorrhiza variegata, propagating, &c., 419
 Aloe of Vera Cruz, 191; American, blooming, 208
 Alyssum saxatile variegatum to propagate, 154
 Amaranthus melancholicus ruber, culture, 30, 103, 110, 141, 145, 151; wintering, 128; as a bedder, 205; bicolor and tricolor, 251
 Amaryllis—longiflora rosea falling, 37; Regina spectabilis, 113; belladonna culture, 134; neglected, 307; failures, 329; culture, 518
 American—kitchen gardening, 230, blight, 498
 Ammonia—in the atmosphere of hot-houses, 326, 329, 330; in air of plant-houses, 353; for grass land, 411
 Ammoniated oxide of iron as a manure, 490
 Anemone Hookeri pallida, 113
 Anemone lanuginosa, 367
 Annuals, list of early, 400
 Anomoea cruenta rowing, 319
 Ants invading wall-fruit, 358
 Aphelandra Leopoldi culture, 298, 478
 Aphides, and two of their enemies, 53
 Apiarian notes, 243, 303
 Apiary, an experimental, 322
 Apley Towers, flower-garden arrangement there, 292
 Aponogon distachyon hardy, 331
 Appeal on behalf of the inferior animals, 160
 Apples—Winter Hawthornden, 49; dwarf, 259; list of, 477
 Apricot trees—in pots, 278; transplanting, 400
 Aquarium—green slime in, 37; constructing, 226
 Aquatics—list of hardy, 172; hardy, 225, 247, 251, 312, 330, 381
 Arabis—variegated, 372, 493; to propagate, 116; Golden-variegated, 413
 Arbutum, a plea for, 410
 Aretotis repens for bedding, 141
 Artichokes, 336
 Arundo donax culture, 399
 Ash-bark for epilepsy, 400
 Asparagus—dying, 76; beds, foul, 361; substitute for, 219; forcing, 277; making beds, 379, 400
 Asphalt walks, 318
 Asplenium viviparum culture, 440
 Astelia aximatum, 391
 Asteria purpurea edging, 37, 478
 Asterula culture, 246
 Astium propagation of bedding plants, 81
 Astoria—Louise van Baden, 113; sunset, 259; scale on, 338; infested by thrips, 399; list of, 498

BALCONY-BOKES, PLANTS FOR, 254
 Balcony, plants for eastern, 379
 Bananas at the Royal Horticultural Society's Kensington Gardens, 515
 Banffshire, gardens worth seeing, 168
 Bantams—eye, hard swelling at, 120; Sebright, 178; Game cock, dubbing, 223; and Spanish, may they be kept together? 364; with Cochins-Chinas, 444; points in White, 484; with Dorkings; white-booted, 484
 Barr Hall, 231
 Battersea Park, bedding-out at, 168
 Beans—falling, 18; Lima, 230; statistics of, 446
 Beaton, Mr. Donald, 266, 415; death of, 349; memorial of, 385
 Bed-centre, evergreen for, 419
 Bedding-out—at the Crystal Palace, 101; at Kew, 104; at Kensington Palace Gardens and Hyde Park, 249; plants, wintering, 370, 428
 Bedding plants—propagating in autumn, 81; of 1863, 141; propagating, 154; wintering, 409, 437; frames for, 418; exhibition of, 469; grown in moss, 511
 Bedfordshire, gardens worth seeing, 191, 271, 263
 Beds, which is the best way of heating by hot-water pipes? 514
 Bee-keeping in Devon, 303
 Bee-keepers, old school of, 181
 Bees—drone-breeding queens, 20; queens changing colour, 20; variation in colour, age of queen, season in Durham and Gloucester, 39; Ligurian in Australia, season in Hants, 40; loss of queens, 38; proceedings of prior to swarming, 88; removing to the moors; in Devon, 59; driving, 60; foul brood, 78, 118, 137, 138, 180, 181, 208, 204, 242, 308, 362, 403, 404, 424, 443, 444, 464, 483, 484, 503; failures, moth, piping, colour of Ligurian queens, stupifying by chloroform, season in Ireland, flights of a young queen, 79; Italian (Ligurian), 89; coarsair, breeding, driving, 96; chloroform for, season in Lincolnshire, bees coalescent in Devon, 97; weak and unhealthy, 98; true causes of failure, 99, 100; killing drones, 100; age of queens, 120; destructive effects of chloroform, 118; stupifying by chloroform, failures, 119; dwindling apiary, 119; modern hives and forced swarms, 120; wintering, 120; experimental management, 137; weak, 138; chloroform for, 139; Ligurians in Scotland; fertile workers, 140; two queens in one hive, 167; foul brood not an artificial disease, 157; the foul-brood controversy, 158; apiarian notes, 159; destroying drones, 159; experimenting on, 160; uniscomb hives, 160; age of queens, 179; effects of fumigation, 180; honeydews, 180; removing to the heather, 180; wooden hives, 181; uniting, wax moth, 203; in Cumberland, 204; honey-taking, 204; humble bees, 204; introducing sealed combs, comb falling, 223; superstitions, 224; longevity of queen, 242; two queens in a hive, 243; drone killing, 243; stupifying with fungus, 244; perforated zinc frames, driving in bar-hives, parthenogenesis, attacks on queens, 263; honeydew, driving, feeding driven, attacked by wasps, 264; moisture in hives, consumption of food in united, 282; two queens; queen's longevity; mis-

hapain uniting; virgin queens, 283; parthenogenesis, age of queens; honey season, 284; mismanagement, 284; discoloured, 284; Mr. G. Fox's apiary, 302; virgin queens; parthenogenesis; introduction of a Ligurian queen; two queens, 303; driving; Edinburgh honey-season; uniting swarms; hives with combs but no honey, 304; random apiarian notes, 321; pollen on, 322; parthenogenesis, drones, driving, 328; honeydew, 324; two queens in a hive; loss of queen; foul brood; experimental apiary; acclimatisation, 312; light-coloured pollen; in frame-hives; fertile workers; foul brood, 343; in Staffordshire; age of queens, 344; pollen and honey of Ivy, 362; drones in October; in Lancashire; sources of pollen; bottle-feeding, 363; experimental apiary, 364; forced swarms, abortive brood, 381; experimental apiary, 382; foul brood; Ligurians in Edinburgh; B. & W.'s apiary in 1863, 383; season in Northumberland; how Italian queens are lost, 384; moving hives, 384; pollen-gathering; Ligurian, 404; microscopic examination of foul brood, 423; driving, 423; Ligurians, flowers for, 424; deposit on hive floor; feeding, 444; gathering pollen in November, 464; to remedy crooked combs in a frame-hive, 484; dying of dysentery, 562; on Lancashire moors, 503; driving, pollen-gathering, 504; in Greece, 504; uniting, 523; flowers, 524; pollen-gathering and breeding in December, 523
 Beet—moss attacking, 155; notes on red, 211
 Begonias, propagating by leaves, 175
 Berberis—culture of evergreen, 57, 85; list of, 87
 Berkhamstead Nurseries, 471
 Billbergia culture, 291
 Bird-question, the great, 49
 Birds—their use, 15; caterpillars eating, 29; selecting for exhibition, 116; small, 272; and poultry-keepers, 259, 279, 321
 Birmingham—Rose Show, 13, 52; Poultry Show, 301, 402, 441; pens at, 361, 381; ten-shilling day, 420; notes on, 460; pens of Game disqualified, 460; breaking rules at, 460; Captain Heaton at the, 500, 519; results of, 502; relative entries at, 518; Mr. Hindson's Game fowls at, 519
 Blackbird, a white, 100
 Black Pantams' ear-lobes, 264
 Black Hampshire Fowls at Birmingham, 484
 Blight, American, 176
 Bloom, prolonging in flower gardens, 161
 Bloomsbury Working People's Flower Show, 32
 Bolers, 141; their requisites, 61, 83; saddle, horizontal, and tubular 84; a new one suggested, 142; Messenger's, 143; Riddell's, 143, 144; to prevent crusting, 219; empty in winter, 378; most economical, 379; garden, 409, 431
 Bone-dust for Vine-borders, 419
 Bones, dissolving, 419
 Borders, formation of for Vines, 245, 259
 Boronia culture, 76; ratonina, 214
 Bowenia spectabilis, 238
 Box-edgings, 258
 Brahma Pootras—merits, 242; not well encouraged, 401
 Bridlington Poultry Show, 117

Brighton Poultry Show, 463
 Broccoli—large, 212; rapid growth of, 296; wintering, 335
 Brood of chickens, largest, 60
 Broughton Poultry Show, 301
 Brugmansia—to bloom in July, 154; not flowering, 154; arborea flowering dwarf, 175
 Brussels Sprouts, small or large? 509
 Buckinghamshire, gardens worth seeing, 191
 Budding, heading back after, 154
 Burlingtonia decora var. picta, 471
 Buyer and Seller, 479
 CABBAGE APHIS, 259
 Caladiums, wintering, 399
 Calandrinia umbellata for bedding, 141
 Calceolaria—violacea culture, 17, 498; punctata, 118; cuttings, 249, 357, 277, 336; caviariensis, 333, 369
 Calceolarias—herbaceous, 49, 290; after flowering, 318; repotting, 419
 Calico varnishing, 399
 Calla palustris, 249
 Camellias—propagation by eyes, 8; twelvegood, 17; Carlotta Papudoff, 49; to bloom in December, 115; out of doors, 135; leaves scorched, 258; list of twelve, 299; blooms, protecting from, wet, 337; dropping off, 338; altering their time of flowering, 379; buds falling, 478; list of, 498
 Canaries—and Bullfinches shedding their feathers, 120; red mites on, 244
 Canna roots, wintering, 331
 Cannes, gardening at, 468
 Carnations—and Picotee, distinction between, 115; seed, 115; wintering, 196; Lord Clifton, 471
 Carrot culture, 476
 Catasium, ambriatum, 192; cerneum, 288
 Cauliflowers, culture of, 123; rate of growth, 123; varieties, 124
 Cedar, removing a large, 458
 Celandine for toothache, 20
 Celery, 310; early, 12; forcing in open air, 68, 116; earthing-up, 93; culture and serving, 217; culture, 358; blanching, 377, 410; attacked by fly, 477; management, 438; diseased, 439; in cocoa-nut fibre refuse, 492
 Centaurea—ragusina culture, 41; argentea, propagating, 196; candidissima as a bedder, 290; argentea and candidissima, propagating, 318, 372, 455; propagating, 459; 490; kymnocarpa and argentea, 468; for edging, 412
 Cephalotaxus Fortunei and drupacea, 434
 Ceropogia Bowkeri, 296
 Charcoal in compost, 456
 Chase's beetle poison, 464
 Cherry aphid, 135
 Cherries—falling in orchard-house, 57; for N. wall, 379
 Cheshire, gardens worth seeing, 191, 318
 Chestnut (Spanish), large specimens, 125
 Chickens—dying suddenly, 80; laying, 95; lameness in, 95; destroyed by a hedgehog, 116; fresh ground for, 220; breeding early, 420; early, 484
 Chloery culture, 358; and uses, 432
 China grass for tying, 490
 Chinese—seed, sowing, 241; and Japanese plants, sale of, 250, 357
 Chippingham Poultry Show, 443, 482

- Chrysanthemum**—Society, Amalgamated, 307; Shows—Agricultural Hall, 386; Stoke Newington, 388; flowers one on a stem, 466
- Chrysanthemums**—to bloom in December, 115; Mr. Salter's, 411; Temple Gardens, 412; list of select, 440; at the Crystal Palace, 452; done blooming, 498; for exhibition, 499
- Cineraria maritima** sowing, 439
- Cinerarias** frosted; leaves curling, 518
- Cissus discolor**, treatment of, 518
- Clay**, burnt, in composts, 486
- Clematis**—Japanese, 49; for a trellis, 299; montana not flowering, 879; Regine and Fortunaei, 471
- Clematises**, propagating, 388
- Clerkenwell Flower Show**, 144
- Cilanthus Dampieri**—culture, 26, 278; for bedding, 290
- Chimera**—for greenhouse, 57; for stove, 196; for a wall, 419
- Cochin-China**—fowls management, 20; chickens weak-legged, 160; fowls, present value, 199; Partridge and Grouse coloured, points in, 223, 424; culture hocks in, 264; white feathers in Buff, 364; losing use of legs, 364; blind, 424; fowls at Birmingham, Captain Heaton's, 479; Partridge, to breeders of, 424
- Cocoa-nut**—refuse for potting, 135; fibre dust for potting, 154
- Cockchafers**, large destruction of, 249
- Coke**, heating by, 219
- Coleus Verschaffeltii**—as a bedder, 192, 206, 237; for bedding, 261; hardness of, 477
- Collingham Poultry Show**, 362
- Colocasia odorata**, 90
- Colours**, melody and harmony of, 10
- Composts**, materials for, 483, 509
- Confers**, to stop bleeding in, 110
- Conservatory**—heating, 17; a small, 37; and Palm-house connected with residence, 350; floor green, 360; borders, plants for shaded, 400; creepers for porch, 400
- Contrast**—chasing, 251
- Coop**, hen-and-chickens, 38
- Corns**—in a cock's foot, 89; in fowls and Geese, 304
- Cornwall**, gardens worth seeing, 191, 373, 413
- Cotoneaster**—berries, 57; nummularia not flowering, 175
- Cottage gardens**, 53
- Cottages**, construction of, 817
- Cottingham Poultry Show**, 201
- Covent Garden Market**, 164, 196, 218, 240, 257, 278, 298, 318, 337, 359, 378, 398, 418, 439, 457, 476, 497, 517
- Coveys** of straw for plants, 451
- Cranston's** "Cultural Directions for the Rose," 511
- Crassula rosularis**, 113
- Crataegus pyracantha** berries, 57
- Crève Cœur**—points of, 264; fowls, 380, 440
- Crocus Imperatorius**, 468, 491
- Cross-bred fowls**, exhibiting, 223
- Croquet and flower-beds**, 265
- Crowing a nuisance**, 301
- Crystal Palace**—bedding-out at, 101, 215; Poultry Show, 176, 222, 320, 340; Flower Show, 184
- Cucumber-house** heating, 299
- Cucumbers**—mildew on, 17, 135; preserving, 113; disease in, 152; growing Winter, 183, 335; vulnerability in, 453; for exhibition, 458
- Cumberland**, notes from, 487
- Cupheas**, hardness and culture, 219
- Cypripedium Lawsonsianum**, height, 439
- Cyanophyllum magnificum**, 26; cutting down, 176; large, 188; culture, 228
- Jyathia dealbata** turning brown, 420
- Jyclamen** culture, 160; Atkinai, 150; Ibericum, 150
- DABIA**—FLOWERS BECOME WHITE, 309; tubers, storing, 457; stakes, preventing rusting, 498; changing colour, 439
- Dampers**—use of, 379; management of, 430
- Darlington Poultry Show**, 478, 502
- Davallias** losing their fronds, 134
- Day's Game Pasts**, 281
- Denbighshire**, gardens worth seeing, 413
- Derbyshire**, gardens worth seeing, 191, 333
- Deutsia crenata flore pleno**, 391
- Devonshire**, gardens worth seeing, 191, 373, 413
- Dew**, 419
- Dewbury Poultry Show**, 198
- Dielytra cucullaria** culture, 298, 360
- Dipteracanthus affinis**, 471
- Diss grandiflora**, superba, 113; culture, 128
- Doddington Poultry Show**, 262
- Dog's ears** swollen, 284
- Dorkings**—plumage, 30; cock unable to stand, 364; feathers changing colour, 464; featherless, 464; breeding for exhibition, 504
- Drosera**—propagation by eyes, 9; *heliconifolia* and *slamensis*, 440
- Driffield Agricultural Society's Poultry Show**, 117
- Drighlington and Adwalton Poultry Show**, 186
- Dublin (Royal) Society's Poultry Show**, 501
- Ducks**—the Cayuga Black, 379; at Birmingham, 464; fattening for exhibition, 504
- Durham**, gardens worth seeing, 9, 313, 357
- EASINGWOLD POULTRY SHOW**, 242
- East Lothian**, gardens worth seeing, 233
- Echinocactus Rhodophthalmus** and culture, 70
- Edinburgh Horticultural Show**, 282
- Eggs**—chilled, 37, 38, 58, 118; experiments on chilling, 155; preserving, 160; added, 178; chilled yet hatched, 199; destroying vitality, 284
- Elms**, large, 113, 123; becoming variegated, 477
- Endive**, culture, 358; wintering, 397
- Entomological Society's Meeting**, 78, 148, 255, 333, 492, 518
- Eranthemum tuberculatum**, 296
- Eria-obsa**, 49; myristiciformis, 471
- Erica carnea**, 145
- Esculus of the Roman classics**, 72
- Essex**, gardens worth seeing, 271
- Eucharia amazonica** culture, 196
- Eugenia Ugni**, hardy, 518
- Evergreens**—for a north aspect, 278; for a screen, 298, 459; for wall, 458
- Everlasting**—Flowers, drying, 169, 360
- Exhibiting and selling poultry**, 440
- Exhibition schedules**, revision of, 108
- Exhibitions**, benefit from local, 266; Eyes, propagation by, 8
- FARNHAM CASTLE**, 127
- Fawsley Hall**, 124
- Fence**, ornamental, 135
- Fern**, Hare's-foot, 240
- Fernery**—constructing a, 94; glass for, 258
- Ferne**—in Wardian case, 37; for a glass case, 241; lean-to house for, 241; under a north wall, 299; infested with thrips, 319; hardy, on growing, 348; for greenhouse, 439; culture of, 478
- Fig**—the Castle Kennedy, 89, 127; falling, 116
- Flora in the Cotswolds**, 269
- Florists** flowers, plea for, 311
- Flower**—Garden at Pentilic Castle, 71; gardens, can the period of full bloom be lengthened in? 161; garden plan, 170; borders, give us back our, 267; gardens, telling beds in, 294; border, light chalky, 498
- Flowers**—to bloom simultaneously, 241; gardeners' names for, 328, 373, 390, 431; in a workhouse, 411
- Flue** heating a greenhouse, 241
- Flues**, new, construction of, 451
- Foreing and plant-houses**, economical arrangement of, 51
- Franks**, 412
- Fowls**—killing for table, 135; cooking old, 155; losing plumage, 160; at night, 179; growth of, 264
- Fraser**, Mr., death of, 69
- Frost of July 19th**, 69, 88, 91, 108
- Frosts**, late, 150
- Fruit**—weights used for, 17; weight of in France, 32; trees, for pot-culture, 220; planting, 256, 257; select, 258; dwarf in front of wall trees, 258; trees, planting, 297; trees, old and unfruitful, 318
- "Fruits, scarcity of home-grown,"** 352
- Fruiterers' Company**, 47
- Fuchsia**, Pillar of Gold, 296
- Fuchsias**—for a window, 94; done flowering, 135; select, 259
- Fugolia cuneiformis**, 391
- Fungus**, poisoning by, 395
- Furze**, transplanting, 338
- GAME-BIRDS**, 59; COCK, BRAK OF RED, 424; fowls—Birchen Grey, 464; Mr. Hindson's at the Birmingham Show, 499, 519
- Gape**, cure for, 444
- Gardeners**—in Ireland, excluding from exhibitions, 13; Royal Benevolent Society, 14, 112, 130, 148, 187, 271, 323, 345; Friendly Society, 26, 68; knowledge desirable for, 68, 105
- "Gardeners' Year Book,"** 490
- Gardenia cocomera**, 391
- Gardening**—in Japan, 148; styles of, 351
- Gardens** worth seeing, 9, 49, 85, 168, 191, 233, 249, 271, 338, 313, 323, 357, 373, 413, 431, 456, 470
- Gardens**, naming plants in public, 130
- Garnham's Lady's Assistant**, 504
- Gastronema sanguineum**, 471
- Geese**—lice on, 137; distinguishing sex in young, 228; baskets for conveying, 223; Toulouse, 264; Sebastapol, 444; at Birmingham, 484; corns in, 304
- Geraniums**—cuttings in open ground, 94; cutting down Zonale, 115; Golden-leaved, 116, 128; Cloth of Gold, 156; treatment, 162; Mdm. Vaucher culture, 220; lifting and wintering, 269; propagating Cloth of Gold, 211; pruning, 239; wintering, 279, 338, 339, 347, 410, 420; cuttings in small pots, 338; leaves for cuts, 433; stopping, 498; horse-shoe, what are, 498
- Geopora zebrina** not flowering, 458
- Ghosts of the garden**, 435
- Gishurst Compound**, dressing fruit trees with, 353
- Gladiolus**—Reine Victoria, 110, 122; disease, 103, 135, 144, 168, 170, 189, 210, 240; pronouncing, 168, 237, 329, 356; question, 264; failures, 288, 298, 323, 339; culture, 369, 378; Charles Davis, 391; large bulbs, 507
- Glamorganshire**, gardens worth seeing, 293
- Glass**—insurance from hailstorms, 367; rough plate, for greenhouse, 458
- Glazed houses**, construction, 314
- Gloucestershire**, gardens worth seeing, 313
- Gloxinias**—list of, 37; culture of seedling, 121; to flower next summer, 337
- Gnaphalium lanatum** propagating, 319
- Gooseberry caterpillar**, 12, 94
- Goosies** wasting away, 137
- Grapes**—spotted, 18, 115; falling, 42; spot in, 57; at Garnston Vineyard, 70; mildew, 76, 115; shrivelling, shanked, 78; Archerfield Early Muscat, 101; thinning, 134; preserving, 176, 337; early ripening of Muscat, 189; packing for conveyance to an exhibition, 192; keeping, 196; shanking, 209, 211; Muscat Hamburg, losing its flavour, 226; for a small viney, 246; Muscat, 251; in bloom shrivelling, 409; Broxmouth, 419; decaying, 439; Tynningham Muscat, 440; ripening in greenhouse, 449; keeping on the vines, 459
- Grass**—walks, establishing, 498; land, compost for, 498
- Grave**, plants suitable for, 1
- Greenhouse**—heating, 76; for bedding plants, heating, 135; arrangement of, 164; stove, and pits combined, 165; temporary heating, 219; shelf for, 219; floor, to protect from drip, 259; heating a small, 318; heating from a dining-room fire, 372, 416; constructing a removable, 459; plants for showing in August, 477; blinds, 495; viney, constructing, 498
- Greenovia aurea**, 296
- Grubs**, underground, 134
- Guano**—liquid manure, 57; to apply, 175; water, 196; on hot-water pipes, 329; water as a manure, 477
- HALIFAX POULTRY SHOW**, 199
- "Hand-book of Vine cultivation,"** 271
- Hants (East) Poultry Show**, 320
- Heaths**—Early-flowering Moor, 145; cultivation of, 130; lists of, 131; propagating hardy, 176; culture of, 227, 252; twelve hardy, 240
- Heating**—from kitchen fire, 13; a small propagating-house, 143; a small house and bed, 219; different levels from one boiler, 428; beds by hot-water pipes, which is the best way? 514
- Hedgehog** destroying chickens, 116, 136
- Hedges**—fast-growing, 338; under Yews, 388; history of, 147
- Heliconia brevipes**, 471
- Heliotropes**—wintering in a room, 400; for winter, 518
- Hem**—Hamburg, ravenous, 130; house floor, 223
- Hens**—broody, 384; egg-eating, 504
- Heron's** plume, 404
- Hertfordshire**, gardens worth seeing, 191, 271, 357
- Hertfordshire**, gardens worth seeing, 313
- Hibiscus Huageli v. quinquevulnaria**, 296
- Hippeastrum equestris** culture, 400
- Hives**—wooden, 138; windows in frame, 139; making, new and superior material for, 204; frame, 223; double-sided wooden, 242; various kinds, 281; adjusting, 362; new material for, 443
- "Hogg's British Pomology,"** continuation of, 467
- Holland House**, gardens at, 513
- Holly**—moving a large, 94; berries, substitutes for, 504, 524
- Hollyhock**—propagation by eyes, &c., 9, 17; cutting, 94; seedlings, culture of, 196; stems, uses of, 386; flowers become black, 409; changing colour, 439
- Holt**, Edmund, 422
- Homerton Nursery**, plants at, 247
- Homelanthus viscosus**, 228
- Honey** storing, 100
- Honeydew**, 308
- Hops**, sulphur and ladybirds, in cultivating, 129
- Horseshoe** culture, 338
- Horticultural (Royal) Society's Show** 4: Rose Show, 7; Exhibition 206; Committee, 9, 33, 69, 111, 132, 172, 215, 263, 293, 389, 469
- Hot-water pipes**—to stop joints, 269 near roots, 419
- Hothouses**, atmosphere in, 285
- Hoya imperialis**, 354
- Hull Poultry Show**, 421
- Humes elegans**, leaves falling, 37
- Hyacinths**—for exhibition, 176 removing suckers from, 498
- Hyde Park**, bedding-out at, 249
- Hydrangea** flowers, to obtain blue, 468, 512
- IMPATIENS, CULTURE OF THE GENUS** 312
- Indian**—Railway, notes from, 32 seeds, sowing, 241
- Insects**, in hothouses, 285; garden infested by, 278
- Iodine** and starch, 338
- Ipomoea**—hederaefolia culture, 17
- Leari**, 155; Horsfall's pruning, 419
- Ireland**—landscape-gardening in, 85; labour and labourers in, 391

- Isabel Powters, Mr. A. Heath's, 523
 Kensington Agricultural Hall Poultry Show, 37
 Ivory & Son's Dorking Nursery, 109
 Ivory, vegetable, 378
 Isles, 236
- JAPAN FLAX FOR TYING, 490**
 Japanese plants, sale of, 250, 250
 Java sparrows changing colour, 364
 Judges should be alone, 362
- KEBLE HALL, 234, 274**
 Keighley Poultry Show, 221
 Kensington Palace Gardens, bedding-out at, 249
 Kent, gardens worth seeing, 191
 Kent Gardens, bedding-out at, 504
 Kidney Beans—need no sticks, 93; forcing, 397
 Kildare Horticultural Exhibition, 148
- LANCASHIRE, GARDENS WORTH SEEING, 191, 249**
 Land-measuring, 165
Lapageria rosea—culture, 136; out of doors, 272
 Laurels—dwarf, under Elms, 491; leaves, insect on, 518
 Lawn—weeds on, to destroy, 197; triangular flower-beds on, 237; to remove moss from, 337; leveling and relaying, 477
 Lead—pipes, to prevent poisoning by, 313; cistern, water in, 444; in water, detecting, 464
 Leaves, do they absorb moisture? 408
 Leeds Poultry Show, 481
 Leicestershire and Waltham Poultry Show, 178
 Leicestershire, gardens worth seeing, 191, 293
 Leigh Poultry Show, 261
 Lettuce—planting, 36; large, 111; insect attacking, 155; Cabbage, culture, 358
Lewisia rediviva, 113
Ligularia Hodgsoni, 471
Lilium lancifolium—culture, 94; repotting, 299
 Lily of the Valley dwindling, 360
 Lime—trees diseased, 126; superphosphate of to apply, 175
 Lincolnshire, gardens worth seeing, 191
 Linnet, Grey, 284
 Linton Park, 145; massing colours at, 169
 Linum, flavum cuttings, 318; lancifolium failures, 329
 Liquid manure, soot as, 144; for Roses, 154
 Lobelia Paxtoni, 141, 439; kermesina as a bedding plant, 164; speciosa not prospering, 259; Paxtoniana cuttings, 419
Lonicera auro-reticulata hardy, 94, 145; flava, layering, 94; fragrantissima not flowering, 175
 Longridge Agricultural Society's Poultry Show, 300
 Low, Mr. H., death of, 240
- MAIDEN-HAIR FERN CULTURE, 78**
Macleania cordata, 110
 Manchester—Field Naturalist Society, 29; and Liverpool Poultry Show, 220; Poultry Show, 399, 520; Pigeons at, 581
 Manufactories, utilising steam from, 296
 Manure for flower-beds, 190
 Marrying trees, 215
 May flowers, 49
 May Day on Birch trees, 477
 Melons—falling, 43; thinning, 94; large, 110; cracking, 155; not coming to perfection, 228; house, heating, 360
 Merdith's grapes at Garston, 168, 253
 Metchy Tydfyl Poultry Show, 95
Mossabryanthemum tricolor for bedding, 141
Myrica Vogeliana, 49
 Mice—poisoning, 279; in garden wall, 459
Mimulus pulchellus, 391
Mimulus discolor, 296
 Midland Counties Bird Show, 522
- Middleton Poultry Show, 360
 Mignonette—for conservatory, 318; culture of specimen, 480
 Mildew of conservatory Vines, 311
Mimulus cupreus culture, 30; cupreus, prolonging blooming, 128; cutting off seeds, 146
Mimulus, Mary and Beattie, 113
Mimulus—on a Peach tree, 419; on the Gooseberry, 431; on the Acacia, 470; on what trees it is found, 509
Mitrisia coelestis—soil for, 299; and culture, 374
 Monmouth Poultry Show, 341
 Moss—for drainage, 176; dyeing green, 404; dyeing blue and green, 394; in composts, 511; instead of pots for bedding plants, 511
 Moulting, aiding, 344
 Mowing machines, 16
Musa Cavendishii, weight of fruit, 12; *aplentum*, var. *vittata*, 238
 Mushrooms—beds, dung for, 57; and spawn, to make, 163, 336, 377, 490; culture, 194, 195, 336; produced tardily, 310; to distinguish, 299; forcing, 417; bed management, 478; spawn, 490
 Myrtle leaves diseased, 518
- NEOPLANTING—CRICKET, 188; hardy, 339; Victoria, 391; buds inserted last year, 469; in orchard-houses, 507**
Nephelephylloides scapigerum, 49
 Netting—fruit, 93; to preserve, 118
 Newport Poultry Show, 501, 524
 New Zealand Flax culture, 440
 Newmillerdam Poultry Show, 96
 Norfolk Ornithological Society's Show, 422, 484
 North Rode Hall, 270
 Northern Counties Poultry Show, 380
 Northampton, gardens worth seeing, 293, 338
 Northumberland, gardens worth seeing, 9, 49, 313
 Notes on gardens, 109
 Nuphar, species of, 248
 Nymphæus, 248
- OAK, REMOVING EYKROCK, 115**
Oenothera acaulis for bedding, 141
 Oleander cuttings, 299
Oncidium—papilio culture, 13; sarcodes, 334
Ophelia umbellata, 113
 Orange—propagation by eyes, 8; tree unhealthy, 219
 Orchard-house—oriental, 12; successful management of, 146, 187; is it a forcing-house? 389; and Peach-houses, 405, 489; a plea for; management of, 507
 "Orchidaceous Plants, Select," 48, 339
 Orchids—what constitutes high culture in epiphytal, 289; resting, 460
 Ormskirk and Southport Poultry Show, 166
Ornithogalum capitatum, 49
 Ouseley Poultry Show, 280
Oxalis Pearcei, 49
Oxalis, a white, 100
Oxirandria fenestralis culture, 400
 Oxygen, use of free to plants, 468
- PAMPAS GRASS, 366, 487; NOT FLOWERING, 399**
 Pansy, culture, 278; seed, sowing, 299
 Pansies—Her Majesty, Prince of Wales, Princess of Wales, and Thomas Moore, 471
 Papaver, monstrous, 171
 Parer, Jotting, 62
 Parrot picking its feathers, 364
 Parakey—growing under difficulties, 147; growing for winter, 234
 Peaches—training, Du Breuil's, 115; drooping, 116; trees in pots under Vines, 135; double-flowering becoming single, 164; Stamp of the World, Exquisite, Noblesse Seedling, Golden Rarripe, Peach-Nectarine, Canary, Monstruosa de Duc, Honey, Turenne Améliorée, and Crispin, 188; house, 241; Chancellor, 299; the Stone, 318; young trees unfruitful, 318; for North Wales, 319; hardy, 338; house management, 359; trees, transplanting, 400; house, 405, 419; under glass and on the open wall, 466; on trellis, 477; in orchard-houses, 507
 Pears—decaying on the tree, 37; leaves spotted, 91; Zéphirin Grégoire, 113; De Malaise and Belle Julie, 238; the Styrian, 267; for espaliers, 299; for wall, 299, 360; Josephine de Malines, 319; Graham's Autumn Nells, 391; spotted and decaying, 477; for a north-east and east wall, 478; orchard-houses, 508
 Peas—dwarf Sweet, required, 12; and how to grow them, 22; descriptive list of, 23; changing its colour by crossing, 415
 Peat in composts, 486
 Pelargoniums—for a window, 94; Scarlet and Zonale, a word in favour of, 108; wintering seedling, 196; Cloth of Gold, propagating, 211; Achilles and Artist, 296; wintering in a room, 400; select list, 440, 496; for exhibition in June, 499
 Pentstemon, list of, 37, 497
 Petunias—Mrs. Smith, 391; culture of double, 399
 Petworth House, 186
 Pheasants, Chinese, 18
 Phloxes—list of, 37; culture of, 175
 Picotee, Col. Clarke, 471
 Pigeons—speed of Carrier, 260; dung, 278; weight of, 364; stocking a loft with, 364; Isabel, 394, 403; Show at Sheffield, 401; new varieties of, 443
 Pine Apples—planted out, 379; decaying, 429
 Pinka, Rev. G. Jeans and Lord Herbert, 296
Pinus aristata, 91
 Piping surface required for hot-water heating, 45
 Pipes—surface of, required, 399; covering for bottom heat, 459
 Pit—heating, 218, 319, 379, 399; glass for, 338; for bedding plants, heating, 399
 Pitcher-plants, resting, 450
 Plant case—lamp-heating a, 360; heating outside window, 360; heating, 499
 Planting, 310
Pleroma elegans, sowing, 115
 Plough, the old Kentish, 48
 Plums—in pots, 37; Belle de Septembre, 296; for north wall, 379; unfruitful, 439
 Pocklington Poultry Show, 179
 Poland—white topknot, 424; at the Norfolk Show, 444
Polyporus betulinus for razor-strops, 432
Polystichum coriaceum losing its fronds, 134
 Poplar, rapid-growing, 154
 Post, plants by, 196
 Potatoes—large, growth of, 111; culture at Bromborough Poor Works, 268; Royal Ash-leaved Kidney, 237; experiments on, 427, 452; to grow early, 516
 Pot-culture of fruit v. planting-out, 445
 Poultry—mortality among young, 80; entries, relative number, 197; Shows, losses at, 361; feeding for exhibition, 264; exhibiting, 300; exhibitions, 319; for profit, 324; with diseased livers, 334; shows, relative entries at, 339; Judges should be alone, 339; weight of, 361; sale of at exhibitions, 361; selling precautions, 381; stating age at shows, 381; selling at Exhibitions, 401; prepaying for, 402; exhibiting profitably, 402; food, 441; disordered, 464; culture hocks in, 484; houses, boarded floors for, 484
 Powters, Isabel, Mr. A. Heath's, 523
 Prickly Pear, to grow, 517
 Primulas—sinensis seedling, 219; with short flower-stems, 378
 Propagating-house, heating a small, 143
 Protecting plants, 467
 Pullies laying, 223
 Pyrethrums, 238
- RABBITS—EAR CUM IN, 160; for exhibition, 424**
 Radish culture, 358
 Railway arrangements for poultry shows, 479
 Ranunculuses—list of show, 46; *Fidella* and *Linden*, 113; culture, 360
 Raspberry canes, planting, 94
 Raspberries on light soil, 338
 Red Cap fowls, 80
 Red spider on Grapes nearly ripe, 57
 Rhododendrons—Bhotan, at Redleaf, 8; Batemanian Prince of Wales, 49; Countess of Devon, 238; Stanish's Perfection, 296; lime in compost for, 380; seedlings decaying, 399; transplanting, 459; twelve hardy, 478
 Richardias, watering and potting, 456
 Richardias, 249
 Rhus succedanea, treatment, 219
 Ribbon-border, 50
 Rock plants, 158
Rondeletia speciosa culture, 491
 Roots—preserving, 278; and leaves, 332, 370
 Rosery at Ipswich, 446
 Roses—in pots, culture of, 8; propagation from eyes, 9; briar stocks for, 17; Show, National, 24; stocks, haybands round, 37; in pots, second season, 30; Hybrid Perpetuals on own roots, 37; list of for forcing, 37; at Messrs. Frasers', 43; Margottin's new, 62; leaves spotted, 115; for the suburbs, 183; mildew on, 106; Rev. H. Do. nbrain, Mrs. W. Paul, 238; for borders, 258; new, 306; Hybrid Perpetual for a bed, 310; six dark Hybrid Perpetuals, 318; new, 326; for pegging down, 337; Reine de la Paix, 337; for pot culture, 338; not flowering, 338; exhibiting—stands for, 360; pruning, 378; not flowering, 379; Madame Falcot, 391; pruning pillar, 399; transplanting, 399; shoot of Banksian, 399; conservatory not blooming, 399; exhibiting, 407; trees, burying their roots deeply, 431; Cloth of Gold not flowering, 410; exhibiting, 448, 506; in the suburbs, 449; from cuttings, 451; in pots for greenhouse, 451; to bloom in winter, 458; Banksian on wall not flowering, 458; in cases, 458; protecting, 458; for pillars, 459; Cranston's "Cultural Directions for," 511; planting, 515
 Rouen—drake's bill, 284; Ducks' bill, colour of, 484
 Roupie poultry, 364
 Rusheas, destroying, 378
 Russella—juncea culture, 220; juncea, 246
 Rust, protecting iron from, 364
- SALVIA PATULA NOT FLOWERING, 319**
 Salading for winter, 358
 Sand—for potting, 319; for plants, 360; silver v. yellow, 459; in composts, 409; river and drift, 510
Sarcopodium peltocaulosum, 296
 Sawbridgeworth, notes on novices at, 44; runners rooting, 47
 Scotch Bakes, 484
 Scottish Ornithological Association Show, 522
 Screen before a road, 419
 Sea-kale—serving, 218; under pots, 360; planting, 379; forcing a row of, 420
 Sea-side, trees for, 299
 Selby Poultry Show, 68
Senecio pyramidalis, 113
 Sexual parts of plants, 135
 Shallot culture, 258
 Sheep among Yews, &c., 439
 Sheffield Poultry Show, 18, 203
 Shropshire, gardens worth seeing, 418, 466
 Shrubs of low growth, flowering, 419
 Silene Elizabethæ, 238
 Silkworms' eggs, 344
 Slimy grub, 94
 Slugs—trapping, 297; new mode of trapping, 317; to destroy, 338; on Calceolarias, 378
 Smoky locality, trees, &c., for, 478

- Snakes destroy chickens, 186
 Soot as a liquid manure, 144
 Spade, the, 31
 Spanish—fowls for a small enclosure, 116; lump in hen's throat, 130; cock's comb drooping, 344, 424
 Sparkenhoe Poultry Show, 197
 Spargula plifera, destroying worms in, 477
 Sphaeralcea acerifolia, 296
 Sphaerogryne latifolia propagating, 46, 419
 Spiraea venusta not flowering, 360
 Spring gardening, 288
 Spruce Firs for light soil, 489
 Squirrel—management, 223; feeding, 434
 Stachys palustris as a substitute for Asparagus, 219
 Staffordshire Agricultural Society's Poultry Show, 262
 Staffordshire, gardens worth seeing, 191, 413
 Stamford Horticultural Show, 27
 Stauranthera grandiflora, 391
 Steam pipes, 298
 Stephanotis floribunda fruiting, 372, 410, 448, 469; pruning, 419
 Stocks, wintering Emperor and Brompton, 398
 Stove—(brick) for greenhouse, 241; arrangement of, 438; portable, in greenhouse, 477, 498; plants to bloom in each month, 499
 Strawberries—soil, making, 12; tan as a covering, 14; culture, 16, 43, 57, 151, 368; growing successfully, 25, 399; in France, 39; protecting from slugs, 43; growing, 66; forcing, 70, 299, 397, 438, 459, 496; slugs on, 87; falling, on clayey soil, 91; on light soil, 134; latest time to plant, 175; cutting off leaves, 466, 448, 489; Frogmore Late Pine, 471; planting, 496; plan of growing near the glass, 517
 Studley Royal, 28, 45
 Surface-stirring in hot weather, 35
 Suffolk, gardens worth seeing, 271, 413, 437
 Suffolk Poultry Show, 300
 Sussex, gardens worth seeing, 191
 Syringing after dressing trees, 496
- TAGETES PUMILA FOR BREDDING, 141
 Tanks—hot-water, 250; heating a Cucumber-pit, 259; heating, 278; heated room, use of, 399
 Tanner's bark, fungus on, 399
 Tarporey Poultry Show, 261
 Teratology, vegetable, 171
 Tetratheca verticillata culture, 42
 Thrips on Grapes nearly ripe, 57
 Thunbergia coccinea culture, 379
 Thyme, Lemon, 115
 Tobacco—leaves, drying, 135; quantity required for fumigating, 318
 Todmorden Botanical Society, 271, 331, 432
 Tomatoes, growing under glass, 89
 Tonbridge Wells Poultry Show, 380
 Torrey Hill, 308
 Transplanting large shrubs, 269
 Trees—notes on hardy deciduous, 71, 88; for a dry soil, 518
 Tremandra verticillata, 175
 Tremella nostoc, 318
 Trenching, its advantages, 417
 Trentham, 327, 354, 374, 392, 413, 484, 499
 Tritoma uvaria culture, 219
 Tritomas and their culture, 426
 Tropaeolums—culture of, 115, 220; greenhouse, 392; select, 518
 Truffles and Truffle-beds, 295
 Tuberoses after flowering, 299
 Turf—laying down, 88; preparing for potting, 438
 Turkeys—baskets for conveying, 223; rouspy, 344
 Turkey Mill Gardens, 366
- UNDERCOVER FOR A WOOD, 459
 Uropedium Lindenii, 11
- VARNISH FOR RUSTIC SEATS, 182
 Verbenas—for early bloom 162; select list of, 175; cuttings, 240; triphylla cuttings, 241; Purple King, cuttings, 337; list of new, 387; classed lists of, 467
 Villarsias, 249
 Vines—propagating by eyes, 8; cutting down old, 38; mildew, salt for, 57; leaves spotted, 76; breaking again soon after forcing, 55; preventing mildew on, 88; proper stocks for, 89; in a greenhouse, 94; mildew, sulphur water a remedy for, 115; leaf-stalks galling, 124; in pots, 135; in boxes, 175; lifting, 176; leaves blotched, 196; chemistry of soils for, 299; fungus on, 219; planting and selecting, 245; culture, 253; border, covering, 257; to form, 245, 259; training, 278; for a viney, 299; turning out, 318; weak, 318; for cold viney, 318; lifting roots of, 322; mildew on, 338; propagating from eyes, 356; lifting roots and remaking the border, 365; cultivation in pots, 367, 379; borders, superphosphate of lime for, 379; lifting roots and renewing the border, 385; mildew on, 390; in pots, soil for, 419; scorched, 430; close pruning, 430; grafting, 447, 458; pruning, 458, 487; starting in January, 459; early, and with Peaches and Pines, 478; bone manure for, 478; border, renewing and planting, 488; forcing, 498; renewing without losing a crop, 505, 516
 Viney—planting, 76; for six Vines 94; heating, 230, 269; moderating its temperature, 350; converting greenhouse to one, 400; management, 490; back wall to, 430; ground or curate's lean-to, 447; and pinery combined, 458; keeping air moist, 476; filling up blanks in, 478
 Vineries—ground, 272, 319, 349; arrangement and planting, 518
 Violets not blooming, 499
 Virginian Poke, 196; eaten in America, 220
- WAKEFIELD POULTRY SHOW, 201; lost fowls at, 280
 Walk, weeds on gravel, 338
 Walnut tree—unhealthy, 155; management, 310
 Warwickshire, gardens worth seeing, 470
 Wasps, 284; destroying, 140; male, 404; as paper-makers; male have no stings, 483
 Water—importance of clean, 133; Lillies, transplanting, 459
 Waterford Poultry Show, 263
 Wax moths, 303
 Webbia pinifolia, 391
 Week, work for, 14, 34, 55, 74, 92, 113, 132, 151, 173, 194, 216, 238, 255, 276, 296, 318, 335, 357, 376, 396, 416, 437, 456, 474, 495, 515; Doings of last week, 15, 34, 56, 75, 93, 114, 133, 152, 174, 195, 217, 239, 256, 277, 297, 317, 335, 358, 377, 397, 417, 438, 457, 475, 496, 516
 Weigela rosea for a north wall, 511
 Well Head Gardens, 193, 212, 229
 Welton Place, 493
 What other flowers think of it, 187
 Wheat plant's vital powers, 271
 Whitehurst and Malpas Poultry Show, 263
 Window, plants for N.W., 496
 Wintering—border plants, house for, 241; bedding plants, 279; plants in cold greenhouse, 390; in hotbed frame, 398; but no greenhouse, 399; plants, 429
 Wireworms injuring Vine roots, 94
 Woodlice, destroying, 37, 220
 Wood, Mr. W., 489
 Woods, coloured, in landscape gardening, 70
 Woodstock Poultry Show, 301
 Worcesterhire, gardens worth seeing, 233, 373
 Worcesterhire Poultry Show, 76
 Workhouse, what may be done there, 284
 Worms—in pots, 13; to destroy, 259
- YEW—WHAT ANIMALS ARE POISONED BY IT? 471; hedge on clay soil, 477; cattle among, 491; herbivorous, animals among, 524
 Yorkshire Agricultural Society's Poultry Show, 117, 482
 Yorkshire, gardens worth seeing, 85, 191, 333
 Yuccas—removing, 379; filamen-tosa, protecting, 399
- ZINC TANK, RAPID DECAY OF, 315

WOODCUTS.

	PAGE.		PAGE.		PAGE.
Agaricus fertilis	395	Erica vaseiflora	131	Pine-houses, Construction of	314, 315
Apple-trellis	235	Flower Garden Plans, 49, 71, 170, 294, 394,	434, 435	Polmaise Heating	473
Beaton, Mr. D, Portrait of	415	Forcing and Plant-house, arrangement of	51	Poultry-feeder	321
Bees, Apparatus for Uniting	119	Foul Brood, microscopic examination of	423	Propagating-house at Berkhamstead	473
" Feeder	363	Gardener's House at Trentham	354	Pits at	474
" Foul Brood	423	Greenhouse Blinds, rolling up	495	Bottom heat for	474
Boiler, Garden	410	Holly Hedge	275	Ribbon-border, Plan of	49
Boronia rutoana	214	Hoya imperialis	254	Rose, Coupe d'Hébé	31
Bottom heat for Beds, four modes of giving	514	Jardinière, March's	6	Trentham, Flower Gardens at	394, 434
Cataetum fimbriatum	192	Land Measuring	106	" Upright Houses at	355
Cephalotaxus drupacea	455	Macleania cordata	110	Truffe, Black	295
" Fortunei	454	Marking Trees	215	Trellis for Apple Trees	235
Colocasia odorata	90	Mitraria coccinea	274	Uropedium Lindenii	11
Colours, Melody and Harmony of	10	Oncidium sarcodes	334	Vegetable Teratology	171
Conservatory and Palm-house, Ground Plan	350	Papaver, transformed	171	Vineries, construction of	314, 315
of	350	Penttilly Castle Flower Garden	71	" at Keele Hall	235, 236
Conservatory at Keele Hall	274	Pinus aristata	91	" at Berkhamstead	471
" at Trentham	414	Parsley, ridges for	234	" Trentham	274, 374
Crop, Poultry	38	" Pot for covering	234	Vines, Propagating by Eyes	8
Cyclamen Atkinsi	150	Peach-houses, Planting	236	" Pruning	467
Ducks, Cayuga Black	279	" Wall Case	236	Wasps' Nests	488
Echinocactus rhodopthalmus	70	Pear, Styrian	267	Welton Place, wilderness at	494
Erica elegans	131				

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JULY 7—13, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
7	Tu	W. Curtis died, 1799. B.	73.6	61.8	62.7	19	54 af 8	16 af 8	1 af 11	2 af 0	(	4 30	188
8	W	Bell-flower flowers.	73.8	56.2	62.0	19	54 3	15 8	26 11	17 1	22	4 39	189
9	Th	Rampion flowers.	74.0	50.0	62.0	16	55 3	14 8	53 11	26 2	23	4 49	190
10	F	Cardinal-flower flowers.	74.3	51.1	62.7	14	56 3	14 8	noon.	34 3	24	4 58	191
11	S	Mullein flowers.	74.8	51.2	63.1	9	57 3	13 8	27 0	34 4	25	5 6	192
12	Sat	6 SUNDAY AFTER TRINITY.	75.5	50.9	63.2	12	58 3	12 8	7 1	30 5	26	5 14	193
13	M	D. Douglas killed, 1834. G.	75.9	51.8	63.8	13	59 3	11 8	53 1	18 6	27	5 22	194

From observations taken near London during the last thirty-six years, the average day temperature of the week is 74.5°, and its night temperature 51.0°. The greatest heat was 92°, on the 12th, 1839; and the lowest cold, 36°, on the 7th, 1860. The greatest fall of rain was 1.10 inch.

PLANTS SUITABLE FOR A GRAVE.



UNTIL public taste submits to well-chastened rules, it is difficult to say how far it may go astray in its anxiety after novelty even in this, the most solemn of all the instances in which it exercises its avocation—the decoration of the resting-place of the departed. It affords little surprise, therefore, that now and then an authority, armed with the necessary powers, enforces views differing considerably from the wishes of those who would like to do as they pleased with the surface earth above a departed relative. Certainly no assemblage of objects presents so much diversity of ornament as the fashionable cemetery of the present day. A company of well-dressed people, conforming as they invariably do to certain conventional rules,

have so many things in common, that in point of diversity they are tame compared with the fancy tomb and its accompaniments.

This growth of fancy is of recent date, for our old churchyards present but little variety. Certainly the local custom of one neighbourhood differs from that of another a hundred miles or more away; but in each the changing events of a couple of centuries have made but little change in the manner in which the graves of the dead have been honoured by the living. But it is not our province to give any opinion thus upon the stone, marble, and metallic enormities.

Another feature has been added which, perhaps, has given rise to as much angry feeling as that of the sculpture amongst those who assume to have the direction of matters of that kind—the planting of flowers upon and around a grave; and it is in answer to a query from a correspondent, “What kind of flowers ought to be planted there?” that I with some unwillingness address myself to the task of giving my opinion on the subject.

Although the decoration of the graves of departed friends with flowers is of great antiquity, and has been kept alive by the stirring appeals of the poet as well as the writer of romance; yet in many parts of England it has either fallen into disuse or has never been practised at all, and it is questionable whether it has ever been so popular in any part of England as it is in The Principality. The impetus, however, given to it by the customs of many of the well-to-do in the example they set in decorating the tombs of their friends in our public cemeteries

may, doubtless, find an echo in the other classes; and after some extraordinary attempts at novelty made by some of the more ambitious something like uniformity may, perhaps, be at length arrived at, and the extravagant idea too often displayed may receive such an amount of public censure as to make it a matter of wide exception.

Assuredly the simplicity of our primitive fathers never contemplated that the decorations of the graveyard should compete with the parterre, although the latter at that early period was of meagre extent as compared with its magnitude now; and most likely the system of planting flowers over a grave had its origin in the first instance in gathered flowers being scattered there. The sympathetic mind of the poet can easily suggest to itself the innocent gambols of young children, plucking the Violets, Primroses, and other wayside flowers that came in the way of their accompanying their only remaining parent to visit the grave of her much-loved partner. It is very easy to picture her seated on the grassy mound, the turf from its recent disturbance having a withered and uninviting appearance; and it requires no great flight of the imagination to conjecture the tiny lapfuls of Daisies, Buttercups, and Violets of the little flower-gatherers left as an offering on their father's grave; while on a second visit the mother's ears are saluted on the journey by the news that the eldest of the little party in plucking a Violet pulled up a plant also, and suggests it might perhaps grow on some naked place on “father's grave,” where the turf did not meet. Transported there, it grows, is carefully watched, and at each visit its history and how it came there is brought to mind; and another naked place being perceived, a plant is this time sought for and brought to occupy the vacant spot. From such beginnings it is likely we owe our somewhat overstrained mode of ornamenting the grave with the gayest ornaments of the flower garden. Observe, I say “overstrained notion of ornament,” for I by no means fall into the views of those who think such things suitable there, however much it may be desirable to do honour to the remains of those gone from us. Certainly the feelings which prompt such offerings are of more consequence than the offering itself; but society at large would speedily make unpleasant remarks if some mourner at a funeral attended that ceremony attired in the gayest colours that fashion commands in the ball-room. It would be held as a poor excuse for such an unusual departure from established customs to be told that “respect for the dead” prompted the bearer to array herself in that way.

Following out the sober idea of suiting the ornament to the purpose, let us see in what way the “little spot of ground”—the final earthly resting-place of each of us, or of such as may be so honoured, may be beautified without any departure from the feelings which ought to pervade such a place.

I by no means object to all floral decoration, but as far as possible I would advise its being with low-growing indigenous plants, and more especially such as flower early.

Of such, many reasons point out the Violet as one of the most suitable. Lowly and unassuming in its outward character, its beauties and its worth are ascertained by a closer acquaintance; besides which, there is something almost hallowed in the name, and I would in this instance go as far as to allow the cultivated variety to be substituted for the wild one.

Next to the Violet we have the Primrose, than which neither the flower garden nor the hothouse possesses a more lovely gem. If more variety than the wild one be wanted, the double one of the same colour, or the double or single white, might be admitted; but I would not advise the dark-coloured ones.

Primroses and Violets are unquestionably the most important of our graveyard plants; although closely following on them, and perhaps in some instances, as in that of beautifying the resting-place of a child, the Snowdrop becomes appropriate; and this early harbinger of returning spring may also be planted on every grave almost, where its unassuming flowers present to the pilgrim the first of Nature's gems of the season. Contrasting, therefore, so well with the herbage which afterwards succeeds it, the Snowdrop is by universal consent an acknowledged legal occupant of the grave.

I am far from acknowledging the same right to its neighbour in the garden—the Crocus. Its foreign origin and gaudy hue seem to point out a place for it elsewhere. If, however, the taste of the party interested decide on the Crocus, I would confine the colour used to white, or, in stretching a point, blue might be added; but I think yellow too glaring to harmonise with other sober objects around it.

I believe with these few and simple flowers my ambition in doing honour to the grave would be satisfied, as all might be planted on an unprotected mound, and all survive the rough ordeal of the scythe. It would, however, be as well to mention here plants adapted to certain localities which might with perfect propriety be included also in our category. In dry soils partaking of the sand the little Stonecrop (*Sedum acre*), might be advantageously used. In like manner on a chalky soil the wild Thyme might form a useful adjunct: there is something appropriate in the sound of the name of the latter.

On soils of an opposite character, shady and moist, some of the Mosses might form useful adjuncts; and here, again, the plant by its name speaks poetically to our feelings. And while we in all instances would allow the turf to a certain extent to occupy the prominent part of the "sod" which overlies the remains of a departed friend, a judicious admixture of the plants mentioned above may form an ornamental feature to an unenclosed grave better than the rough herbage which otherwise might occupy the place. The pretty little grass-like plant Thrift might, however, be admitted, and might form a useful feature on exposed places near the coast; and a neat-growing little herbaceous plant, an Everlasting, might be introduced as a fitting object here also.

Observe, I have advised the adoption of only low-growing plants as fitting memorials of such a place. The Wallflower which grows on some church walls and on some ascends to the summit of the tower, sowing itself abundantly below, is nevertheless in my opinion unsuited to the grave. In like manner Snapdragon, which I have seen take possession of a wall at a great elevation, as well as Valerian, are plants all too tall to meet the requirements of what I would lay down as a standard in such cases.

The herbaceous flower-border affords several more plants of great beauty and suitability; but I am unwilling to allow any but those of home origin a place among our British dead. Much has been said about the Rose, and it is almost sedition to say anything against this acknowledged queen of flowers; but I am far from certain that the graveyard is a fitting abode for her.

The time-honoured custom of associating the sombre Yew with our graveyards has in all likelihood led to the Cypress being a subordinate appendage to the same object, and small Cypressess are frequently studded around sculptural ornament. This, of course, is confined to the more affluent, and deserves a notice hereafter; but I would ask a very solemn question of those who recommend such aspiring plants as Cypress and Juniper to ornament the graves of crowded churchyards, what it would look like if every grave

in the place were similarly planted? It would be a perfect shrubbery lacking the variety observable elsewhere. Besides, a grave planted with shrubs or high-growing plants conceals from view the sight of several of the graves beyond it, thereby acquiring exclusive attention from passers-by. More might be said on this head, but I leave it and pass at once to another feature in graveyard or cemetery decoration—that of the enclosed plots called family graves.

Belonging as these objects do to the wealthier classes of society, we might reasonably expect in these tokens of a refined taste. It is much to be feared the spirit of competition has much to do with the pageantry to be found here. Of sculptural ornament it is not my province to speak; but can anything be more at variance with the quiet solitude by which the spot is invested than the glaring colours by which it is too often decked out? An enclosure containing white stone or marble sculpture is surrounded by ironwork often bronzed or gilded, and through the openings are seen the brightest scarlet Geraniums and yellow Calceolarias that the florist can furnish. It may be that my ideas lag behind the spirit of the times; but I nevertheless have no hesitation in putting them forth as opposed to this glitter.

The gayest part of the parterre cannot exceed what is seen sometimes around a grave. Assuredly there is a proper place for everything. Elsewhere the Verbena, Lobelia, and Petunia look well, but a grave is not the place for them. That plants are necessary there I admit; and those proper for such a small plot as is sometimes enclosed render it anything but easy to suggest what is best suited for it; and I hope some of your readers will impart their opinions on this matter. My own are as follow:—

If it were possible to retain the verdure of the turf, short, thick, and velvety in the uniform condition it is seen in when at its best, as in showery weather in May after it has been recently mown, I do not know of anything which could improve it; but the ever-changing features of vegetable life render a certain amount of labour necessary to keep turf in order. This is not always convenient to those who reside at a distance from the spot. Something, therefore, that would form a substitute for grass in small isolated spots is much wanted; and when *Spergula pilifera* was announced to the gardening world as an acquisition likely to supersede turf, not requiring any mowing, &c., I was in hopes we had a plant in many respects suitable to decorate the grave. Unfortunately, with me at least, the plant has been a complete failure; and we must select something else as a substitute for that sod which is destined to cover the remains of all that is left of mortality.

A plant that would look well at all times, and without the trouble which grass entails, would be a great acquisition. The compact habit and deep green foliage of *Saxifraga hypnoides* give it strong claims to our notice, and I am in hopes it will answer. There is, however, no reason why some of the flowers mentioned as applicable might not also be adopted here; and perhaps a dwarf Rose might be introduced, a miniature Cypress or two, or a small stunted Yew, which may have previously been kept in a flower-pot, and to keep it dwarf may still be kept plunged in that condition; but gay summer-flowering plants, such as are usually called bedding plants, ought not to be used.

Certainly some little order and appearance of cultivation may be shown. The plants may just touch each other, but need not crowd. Supposing a plot 6 feet square required planting, there might be one or two dwarf Cypressess, just as the number of graves required. These might stand near the head, and the remainder of the space dotted over with patches of Violets, Stonecrop, *Saxifraga hypnoides*, or *S. tri-dactylites*, which becomes an excellent and closely formed cushion of the deepest green; a patch or two of Primroses, which if removed when done flowering might give place to a dwarf Phlox, of which *P. subulata* is very good; and I am not certain but that the deep green foliage of the *Saxifraga* might allow an Auricle by the side of it. Snowdrops, of course, must not be forgotten; and there is a dwarf Everlasting, the foliage of which, as well as its flower, looks well at all seasons. With these I should say be content; or if some of them were omitted it might perhaps be as well. It is, nevertheless, not unlikely but another set of plants might be adopted by some one else equally well adapted for the purpose.

Before concluding, I may add that I by no means disapprove of the culture of flowers in a public cemetery, although I cannot see in which way the undue preference given to bedding plants can be recommended on any plea excepting that of gaiety at one particular time, and that not of long endurance. Assuming, as is very often the case, that a circumferential border exists, shutting the interior from outward objects, evergreen shrubs ought to predominate on this border, so as to give it a clothed appearance in winter; while in the front of this border may be cultivated a great diversity of flowers. I will not say that it may be converted into a fashionable ribbon-border, but many of the plants so used may have a place here, planted amongst others of their height and character. This may be a feature in the exterior border, but the clumps or beds that diversify the centre ought to be more sober in their exhibition of floral gaiety, while evergreens must predominate still more extensively. Nevertheless, such plants as Pinks, Iberis, Arabis, &c., might be grown to advantage; and nothing looks better than the double white Rocket, for with so much turf and evergreen white or light-coloured flowers will tell to most advantage, and there are several of the hue—as, for instance, some Campanulas, white Phloxes, and I cannot see any objection to patches of Cerastium ornamenting the front; but beyond this most if not all the other bedding-out plants must keep outside.

It is needless for me to follow this subject further; but I hope others will favour us with their opinion, as it is a topic deserving the notice of those best qualified to take of it a just view, and a series of letters in THE JOURNAL OF HORTICULTURE would be of service.

J. ROBSON.

CULTURE OF ROSES IN POTS.

THIS is a topic of general interest, although the following is a reply to "R. S., Bristol," who asks for information how to grow potted Roses in quantities.

Although you do not say so, we infer that your object is to get up a stock of Roses in pots, for blooming under glass in spring and early summer, and there is scarcely any other object in the whole round of gardening that is so likely to prove a source of pleasure to those who are fond of that which is sweet and beautiful. Supposing, then, that you desire to have Roses in bloom next spring, there are two ways by which your end can be attained. You can either procure plants that are already established in pots and in a fit condition to be gently forced into bloom, or you can get plants from the nursery-rows in autumn and pot them yourself. And as it is your object to grow extensively, the latter is the course that is to be recommended, as being not only the cheapest way of obtaining a large stock, but will, by following the directions which shall here be given, prove perfectly successful.

You should go to some good Rose-nursery early in autumn, and get the first pick of the number you require from the nursery-rows. Choose those that have broken from three or four buds, that have made half a dozen strong healthy shoots and have stocks only a few inches high, or, perhaps, better still, that are grown on their own roots. Let your selection be marked, and having secured them, leave them where they grow till the middle of October, about which time they have generally pretty well matured their growth and are shedding their bottom leaves. This is the proper time to lift and pot them with the view of getting them to form fresh roots before winter, and by gentle forcing to secure a crop of bloom the following spring.

The plants should be lifted with care, preserving every twiggy root, and shortening with the knife those that are strong and pithy. Pot them firmly in pots ranging in size from 6 to 8 inches. The soil most suitable for them is a rather heavy loam, with about a third of well-rotted hotbed manure or cowdung, with a slight addition of road grit or coarse sand. The pots should be well drained, and in potting the roots should be nicely distributed among the soil. When potted and watered plunge them at once in a pit or frame where there is a gentle bottom heat. Keep them rather close for ten days, and when the days are dry syringe them morning and afternoon, and keep them shaded from the sun. After the first fortnight the lights may be taken off

them for a few hours in the morning and evening, always putting the lights on for the night; but do not shut them down closely.

The gentle bottom heat and the close moist atmosphere will maintain the action of the roots and leaves, and by the end of November they will have made fresh roots to a considerable extent, and the buds on the last season's growths will be as firm and prominent as those which have not been disturbed at all. The leaves will be all shed, except a tuft at the top of each shoot. If by this time the bottom heat has not entirely gone, they should be removed to some cool place. Their removal from such quarters will in most cases be a matter of necessity, as few are the places where there is such accommodation to devote to wintering plants that can be otherwise protected. They can be plunged in some sheltered place where heavy rains and severe frosts can be guarded against. Sawdust or cinder ashes form excellent material for plunging in, as either of these is not so subject to the destructive inroads of worms, and forms a better protection to the roots than common garden soil.

The time to prune Roses thus treated must be regulated and determined by the time that they are required to bloom in spring. In our own practice we have several times had Roses in bloom, under similar circumstances, early in March; and when required so early they should be pruned by the middle of December. It gives the plants a much better chance the first year; and, looking at them as permanent objects, it is far the best way to keep them at rest till the middle of February. Let it, however, be supposed that you would desire a few of them to flower in March, that few must be pruned at the time named above. Cut them back to two or three eyes, according to the strength of the shoots, always cutting more closely in the case of the weaker growths.

By the first week of January they should be introduced into a temperature of 45° to 50° at night, and if they can be afforded a bottom heat of 60° it will be much to their advantage in causing them to break regularly and strongly. They should be kept near the glass, and be freely syringed with tepid water at least twice a-day—morning and afternoon.

As soon as the shoots attain about an inch in length increase the temperature by 5°, and on every favourable opportunity admit a good supply of fresh air. Keep them away from the heating apparatus, and shut up early in the afternoon with a moist atmosphere. There are few things more adverse to Roses than a dry parching atmosphere. Increase the temperature gradually to 60° by the time they show their bloom-buds.

Green fly is a great pest to forced Roses, and must never be allowed to gain a footing; but their most treacherous and destructive enemy is the small black maggot, with which all Rose-growers are familiar. It folds itself up in the leaves, from which retreat it sallies and eats into the centre of the Rose-bud when little larger than a pea. There is only one way, that I am aware of, that you can cope with this enemy, and that is to look over the plants every day; and wherever you see the leaves folded up or sticking two together, there you will find a maggot which you will destroy with a hearty good will, and put an end to his gluttonous repeat. When the buds show themselves above the foliage, be sure to give a free admission of air on all occasions when weather will permit, at the same time avoiding currents of cold air. If this is not attended to, the flowers and their stems will be weak and short-lived.

Immediately the flowers begin to show their colour the plants must be removed to a house where the temperature ranges about 55°, giving the plants plenty of room, light, and air. Here they will not only open their flowers with a higher colour and a greater perfume, but the stems and leaves will acquire a degree of stiffness and strength so desirable in Roses, and which cannot be attained in a higher temperature and a moister atmosphere. When in full bloom a temperature of 50° is sufficiently high. Under such circumstances they will remain in bloom a long time, more particularly if shaded from the sun, and carefully attended to with water at the root—that is, if the soil is preserved in that genial condition so commonly described by gardeners as "neither wet nor dry." Under such circumstances as these you can have the enjoyment of a display of this queen of flowers next March; but as already stated, it is the better

way for the plants to let them break the first season of their own accord, and let them be bloomed with less artificial heat.

When the plants have done flowering they should by all means be as carefully attended to as if they had yet to bloom. It is too often the case that forced plants are sadly neglected and mismanaged after having yielded their crops of bloom for the season. They should be gradually hardened-off and not placed out of doors till all danger from frost is past. If when lifted in the autumn they were potted into six and eight-inch pots, the strongest of them should be shifted into pots two sizes, and the weakest into pots one size larger. When shifted it is of great advantage to them to be kept under glass for a week or two after. This is presuming that they are shifted before all danger from late frosts is over; but, when shifted later in the season, they may be plunged out-doors at once. Choose a sheltered situation where they can at the same time have all the sun possible; give them plenty of room, and see that the material in which they are plunged is sufficiently open, and the site well drained, so that no stagnant water can stand about their roots, otherwise these would rot, and as a consequence the foliage would become yellow and drop off, leaving you with unripe and diseased plants. Roses, and in fact all other plants intended to be forced, should never be, as is too often the case, plunged in damp shady situations. Throughout the summer endeavour to supply them with water, sufficient to keep the soil at all times in a healthy growing condition; and should worms find their way into the pots, water with clear lime water.

If worked on briars keep them free from suckers, and remove all flower-buds as they make their appearance, except in cases where Roses may be required in November; then Hybrid Perpetuals may be allowed to bring forward the buds which they form after the middle of August; and by placing them in a cold pit or frame, and later in the season encouraging them with a little fire heat, they will expand and last in flower a long time. This practice is not, however, to be recommended, except you intend to grow a large stock of plants, as such treatment is not favourable to their successful forcing in spring; and I should think in your climate your Roses out-doors can be had in flower late in the season.

When the plants have mostly shed their foliage, and presuming that you intend to force a portion of your stock early, the best-ripened plants should be pruned. Then turn them carefully out of the pots, and examine the drainage, and get rid of any worms which may have intruded. When worked on the briar stock it frequently happens that the stock gets green and mossy; whenever such is the case, let them be dusted over with quicklime, which will destroy the parasites. Remove the surface soil, and replace it with fresh, rich soil, and when intended to be forced early they should be placed under glass at once. A cold pit or vinery will be a good place for them, if you desire a constant succession of flowering plants till Roses are in bloom in the open ground.

Continue throughout the winter to prune a convenient number, always putting them under glass as soon as they are pruned. It is always best not to put them into heat till after they have been under glass in a cool structure for a fortnight after they are pruned. Bear in mind all the time that it is only recommended to leave them out of doors in winter, in case of your not being able to afford them the protection of a pit or frame. It not unfrequently happens that those pruned in February, and left out of doors, have their buds crippled with March frosts, for spare corners under glass are very scarce now-a-days.

It frequently happens that those forced the second season after being lifted in eight and ten-inch pots, require nothing further at the root the third season than simply to see to the drainage, and to remove a portion of the soil from the surface of the ball, and replace it with rotten dung and loam in equal proportions. This, of course, entirely depends on circumstances. If the roots have made their way down to the bottom of the pots, leaving a large portion of the top soil inert and unoccupied, they should be partially shaken out, have the strong roots pruned back, and in repotting a good portion of the soil be placed below the roots. My practice has been to shake them out and treat them as new

second year, and to root-prune them in a similar manner to that practised with the Geranium, only not so severely. It is not only possible to keep them healthy and in moderate-sized pots for many years by this process, but they seem to rejoice in the operation, starting off with increased vigour with every application of fresh soil.

In making a selection of Roses for forcing you should select the greater portion of your stock from the Hybrid Perpetual section. Most of the Teas are beautiful for pot-culture, but generally speaking do not bear early forcing so well as the Hybrid Perpetuals. Then there are Provence, Cabbage, and Moss Roses, so beautifully fragrant.—D. THOMSON.

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION.—JULY 1.

THE horticultural campaign began early this year, and it has closed at that period of the season when Londoners begin to consult their "Bradshaws," and when "Murray" is greatly in request. The rival claims of the south coast and its soft sea breezes and sunny sands, the picturesque scenery of the Cumberland lakes, and the heathery mountains and deep glens of the Highlands, are now becoming matters of anxious deliberation; those who have country seats to retire to are beginning to think of a change of quarters, and in another month London will have gone out of town. It was, therefore, we think, wisely determined that the last great horticultural display for the season should take place before this periodical migration commenced.

The Royal Horticultural Society is not remarkable for its good fortune as regards weather, and when it does have a wet day for one of its exhibitions the fact is sure to be expatiated upon, and not unfrequently with some embellishments, and it is, therefore, only justice to say that no day could have been finer than Wednesday last; genial in temperature, with a bright but not overpowering sun, whilst a gentle breeze kept the air from stagnation, it was just the day that one would have chosen for out-door exercise.

As on former occasions the plants and cut flowers were arranged along each side of the nave of the International Exhibition building, the hot dry atmosphere of which, it may be remarked, caused many of them to give evident signs of flagging, whilst the Fruit was allocated in one of the refreshment-rooms, involving a voyage of discovery to find it out. Many must have failed in the attempt; for, contrary to all wont, the attendance of visitors to this part of the Exhibition was unusually thin, notwithstanding the high character of the productions which invited their inspection.

The absence of the grand specimen stove and greenhouse plants, as grown by Messrs. Whitebread, Green, Peed, and others, which constituted so important a feature in previous exhibitions, was also much to be regretted, as it deprived the Show of much of its effect; and this want the Roses, fine as they were, and forming as they did a principal, and, indeed, the most attractive portion of the Exhibition, did not fully compensate for.

FINE-FOLIAGED AND VARIEGATED PLANTS.—Many large and handsome specimens of this description of plants were exhibited, including Crotons, Alocasias, Caladiums, Latanias, Dracenas, Araucarias, and a variety of others. Amongst Nurserymen Messrs. J. & C. Lee took the first prize with a collection in which were a noble *Alocasia metallica*, a large and very fine *Cordyline indivisa*, *Cyathea Smithii* with its handsome lively green fronds, *Cibotium princeps*, *Rhopala magnifica*, and *Caladium Baraquini*. Messrs. A. Henderson and Co. had the second prize for *Alocasia macrorrhiza variegata* and *metallica*, the narrow-leaved *Croton angustifolium*, the elegant fern-like *Jacaranda filicifolia*, *Dracena ferrea* and *cannæfolia*, *Dieffenbachia maculata*, *Maranta variegata*, *Caladium Chantini*, and other plants. Mr. Bull, of Chelsea, was third, and he had some magnificent plants; among which may be noticed a tall and very handsome *Rhopala corcovadensis*, *Dracena australis*, *Gleichenia flabellata* very large, *Pandanus utilis*, *Araucaria Bidwilli*, *Alsophila excelsa*, and *Latania borbonica*. In a collection from Messrs. Jackson and Sons, of Kingston, there were also several large specimens, including a noble *Alsophila australis*, *Corypha australis*, *Dracenas terminalis* and *ferrea*, and the variegated *Pandanus javanicus*.

Among Amateurs fine collections of ten came from Mr. Taylor, gardener to J. Yates, Esq., Highgate, and Mr. Smith, of Syon; the former taking the first and the latter the second prize. In Mr. Taylor's exhibition there were *Cycas revoluta* and *Dion edule*, both of them of great size, and a fine *Chamaerops humilis*; and in that of Mr. Smith an immense *Latania borbonica*, *Croton pictum* of great height, *Calathea* or *Maranta zebrina*, *Duranta Baumgardti*, and the *Wax Palm*, *Ceroxylon andicola*. A third prize was awarded to Mr. Ross, of Newbury. *Phlebodium aureum* and *Coleus Verschaffelti* in this collection were good specimens.

Prizes were offered for variegated *Begonias*; but we only noticed one collection, which came from Mr. Young, gardener to R. Barclay, Esq., of Highgate, and it received a second prize. It contained handsome plants of President Van den Hecke, *Duchesse de Brabant*, and *grandis*, also Charles Encke, Anna von Schonborn, and the better-known *Rex*, *Marshalli*, and *Rollisoni*.

Caladiums afforded a more extensive display, and from the diversity in the markings of their foliage were much more effective. Messrs. A. Henderson & Co. had the first prize for a fine collection, consisting of the pretty *argyrites*, *Belleynei*, *Chantini*, a handsome plant of *bicolor magnifica*, *Troubetzkoyi*, a large plant of *Wightii*, *picturatum*, *peccile*, and *regale*. Mr. Ingram, gardener to J. J. Blandy, Esq., Reading, had *splendens*, *variegatum* and others already named, and received the second prize; Mr. Young, Aberman, coming in third.

FUCHSIAS.—These did not come up to our expectations, being exactly the same plants that were at the Royal Botanic Show the previous week, and much deteriorated from what they then were; exception must, however, be made in favour of Mr. Higgs, gardener to Mrs. Barchard, Putney Heath, who had a first prize for three fine standards, standing about 9 feet high, of *Rose of Castille*, *Prince of Orange*, and *Venus de Medici*, the heads being full of flower. For six plants Mr. Gardener, of Clapham Park, received the first prize for *Fair Oriana*, *Senator*, *Wiltshire Lass*, *Madame Cornelissen*, *Rose of Castille*, and *Isa Craig*, all of them handsome plants, and full of bloom. Next came Mr. Cannell, gardener to G. Jennings, Esq., of Clapham; and in the Nurserymen's class, Mr. Treen, of Rugby, had a third prize.

FERNS.—Several collections of these, both exotic and British, were exhibited, the latter proving to the majority of the visitors the more attractive of the two, and affording a relief to the eyes from the brilliant colours of the cut Roses. In the class for Exotic Ferns, by an oversight, apparently, on the part of the exhibitors, the requirement that the pots should not exceed 15 inches in diameter was not complied with. Such collections, consequently, were disqualified for receiving the amounts offered in the schedule; but extra prizes were awarded instead to Mr. Bull, Messrs. A. Henderson & Co., and Mr. Lavey, of Fetcham, all of whom had excellent collections. That from Mr. Bull was the finest, all of the plants being large and handsome specimens. It contained two very large *Cibotiums*, *Barometz* and *princeps*, *Alsophila excelsa* and *radens*, *Dicksonia antarctica*, *Blechnum brasiliensis*, and *Pteris natalensis*. Messrs. A. Henderson and Co., whose plants were also very fine, had *Cibotium*, *Barometz*, *Schodei*, *Cyathea boconensis*, *Drynaria coronans*, *Brainea insignis*, *Phlebodium pulverulentum*, a large *Alsophila australis*, *Angiopteris erecta*, and *Drynaria muscicola*.

In British Ferns the finest came from Messrs. Ivery and Son, who had two collections. That which received the first prize consisted of *Athyrium Filix-femina multiceps*, *corymbiferum*, *depauperatum*, and *plumosum*; *Lastrea Filix-mas cristata* and *Jervisii*, *Lastrea decurrens*, *Onoclea sensibilis*, *Osmunda regalis cristata*, *Polystichum angulare Elworthii* and *proliferum*, and *Adiantum capillus-Veneris*. The other collection was also very select, containing, among others, the new forms of *Athyrium Filix-femina*, distinguished by the names of *glomeratum*, *Iveryanum*, and *Applebyanum*, and *Blechnum spicant polydactylon*. Mr. Salter also exhibited a fine collection, in which *Osmunda cinnamomea*, and *spectabilis* and *Struthiopteris pennsylvanica* were bearing panicles; and there were besides *Scolopendrium vulgare polycuspis*, a variety with the extremities of the fronds much branched, *Asplenium lanceolatum microdon*, and a handsome plant of *Lastrea Filix-mas cristata*. Mr. Lavey had likewise a second prize for an excellent collection, in which we noticed a

fine *Trichomanes radicans*, and some of the new forms of *Athyrium*.

NEW PLANTS.—These were sent in considerable numbers, some making their appearance for the first time, others having been already shown at previous exhibitions. Messrs. Veitch had two extensive collections containing many of their recent introductions from Japan, not the least important of which was the beautiful and sweet-scented *Lilium auratum*, already described in these columns, and of which a faithful representation is given in the *Florist and Pomologist* of September last. The specimen exhibited did not, however, give a fair idea of the great size to which the flowers attain—8 or 10 inches across—when produced from large bulbs. The hybrid *Cattleya* between *Acklandia* and *Lodigesi* was another beautiful and interesting object, and likely to prove but one of a number of other acquisitions in the same line; *Bomaria multiflora*, a greenhouse climber from Peru, with orange and scarlet flowers, is also a plant likely to prove an acquisition, more especially as it is very free-flowering. Among other plants from the same firm were *Abies Alcoquiana* from Fusi-Yama, or the Sacred Mountain of Japan; a hardy and beautiful *Gymnogramma*; *Acrophorus affinis*, a very handsome species with shining light green fronds; *Asplenium consimile*, a new hardy Fern from Chili; *Drynaria Hilli*; *Alsophila Tenitis denticulata*, with handsome shining fronds; and *Ligularia Kämpferi argentea*, with roundish leaves variegated with cream colour. Besides these there were *Spharogynne latifolia*, *Retinosporas*, *Sciadopitys*, *Miconia pulverulenta*, and others noticed in previous reports.

From Mr. Bull came *Phaseolus lilacinus* with ornamental lilac flowers, the fine *Araucaria Rulei* from New Caledonia, together with one of its cones measuring about 20 inches in length; *Latania Verschaffelti*, a variegated *Broussonetia papyrifera*, *Euterpe edulis*, *Areca dealbata*, the fine golden *Gymnogramma Laucheanum*, and, what was very remarkable, a fine plant of the *Madagascar Ouvirandra fenestralis* in flower.

Messrs. Backhouse, of York, had a collection of rare *Hymenophyllums* and *Trichomanes*, among which were included *Trichomanes scandens*, *Zollingeri*, and *membranaceum*; also *Hymenophyllum valvatum*, *Lindsaea stricta*, and other tropical Ferns.

Messrs. E. G. Henderson & Son brought *Imantophyllum cyrtanthæflorum*, with ornamental red flowers, not, however, nearly approaching those of *miniaturum* in size; Mr. Watson, gardener to C. Leach, Esq., Clapham Park, contributed *Disa grandiflora superba*, with flowers in which a bright scarlet was the prevailing colour; and the Rev. J. G. Fussell, of Frome, a fine seedling *Gymnogramma* with the fronds densely covered with rich yellow dust.

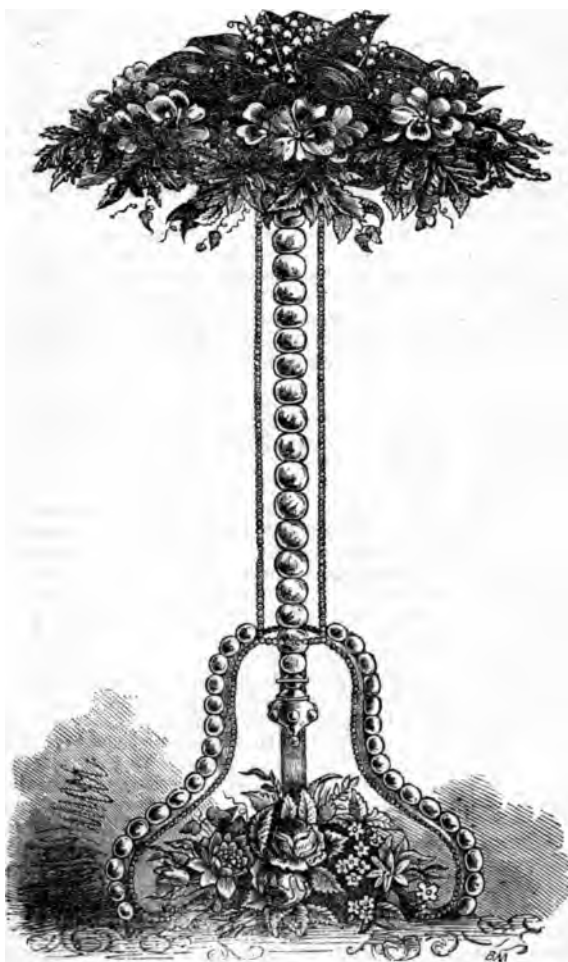
Mr. Standish had *Asplenium elegantulum*, a handsome *Lycopod* from Japan, and two Oaks from the same country, in one of which the foliage was very curious, appearing as if it had been in great measure gnawed away by some insect, this characteristic, however, being natural to the variety. A large and very interesting collection of *Euryas*, *Osmanthus*, *Retinosporas*, *Aucubas*, and other Japanese plants was likewise shown by the same exhibitor.

MISCELLANEOUS.—An exceedingly interesting exhibition was contributed in this class by Lady Dorothy Nevill, to whom we owe the introduction of the *Ailanthus* silkworm into this country. Her ladyship not only showed the insect in all its stages from the egg to the moth, as well as the silk with which the cocoons are surrounded, but the worms themselves at work on the *Ailanthus* tree. The importance of this exhibition was marked by the first prize being awarded to it.

From Messrs. E. G. Henderson came a collection of variegated *Geraniums*, including several of the new tricolor varieties, one of them called *Lucy Grieve* having a fine crimson zone deepening in the older leaves to a purplish-crimson; variegated Chinese Primroses, the beautiful silvery-leaved *Centaurea argentea*, and an extensive and very interesting collection of Ivies were also shown by the same exhibitors. Mr. Lavey and Mr. Higgs had some very fine pairs of *Lycopods*; Mr. Lavey also sent a collection of ninety-six kinds of wild flowers; and Messrs. Hooper & Co. had a similar exhibition as regards annuals, of which they exhibited fifty kinds, also *Pinks* and *Pansies*. Several good stands of the last two flowers were shown by Mr. Bragg, of

Slough, and Hooper, of Bath, both of whom had also Sweet Williams; those from Mr. Bragg being Hunt's varieties, and exhibiting a great advance in roundness of outline. Mr. Turner had also a fine stand of Pinks as well as of Verbenas, for both of which he received prizes. Geraniums and Petunias were shown by Mr. Bull; a fine box of *Iris lævigata* by Mr. Standish; and *Fuchsia Pillar of Gold* with yellow variegated leaves by Messrs. F. & A. Smith.

For Wardian cases arranged for the drawing-room, Messrs. A. Henderson & Co. had first prize for a large curvilinear-roofed one opening at the ends; and Messrs. Barr & Sugden had a small neatly-filled case of a much less expensive character. Some tastefully-filled flower-baskets were shown by Messrs. Henderson; and Mr. Macintosh, of Hammersmith, had three handsome window-boxes arranged with excellent taste; *Pelargoniums*, *Calceolarias*, *Verbenas*, and *Stocks*, with *Mignonette* and blue and white *Campanulas* in front, being the materials with which they were filled. They well deserved the first prize which they received.



An extremely ornamental jardinière from Mr. March, of St. James's Street, of which the accompanying is a representation, also excited great admiration. It consists of crystal, the stems being a series of spheres, the play of light through which has a most brilliant effect; while the glass itself is protected from breakage by a light framework of white metal. These jardinières are intended for the window-places in drawing-rooms or for placing on tables, their ornamental appearance being enhanced if elevated on blocks covered with maroon velvet.

FRUIT.

The display of Fruit was excellent, especially as regards grapes and peaches and nectarines; but, as we have already

remarked, its very existence appeared to be unknown to a great proportion of the visitors.

In collections the first prize was awarded to Mr. Turner, of Slough, who had fine Muscat and Black Hamburg Grapes, very fine Noblesse Peaches, Hunt's Tawny Nectarines, Black Tartarian Cherries, Marquis of Ailla Melon, a Queen Pine, and President Strawberry. Mr. Penny, of Regent's Park, was second with a good Ripley Queen, a Green-fleshed Melon, Muscat of Alexandria, and Snow's Muscat Hamburg Grapes, Elruge Nectarine, Grosse Mignonne Peach, and Bigarreau Cherries. Mr. Henderson, of Trentham, was third; and an extra prize was given to Mr. Turnbull, of Blenheim.

PINES.—These were not numerous, no more than thirty Queens being shown, and only two Providences, both of which, though of large size, could not be considered as perfect; the one which received the first prize, from Mr. Young, of Aberaman, being over-ripe, and the other from Mr. Wallis, gardener to J. Dixon, Esq., of Congleton, being almost green at the top.

The first-prize Queen came from Mr. Grant, of Finchley, and was a handsome fruit, weighing 4 lbs. 9 ozs.; next came Mr. Smith, gardener to J. Walker, Esq., Calderstone, with one weighing 5½ lbs., but not ripe enough; and the third prize was given to Mr. Ward, of Headington, Oxford, for a well-ripened fruit of 4 lbs. 4½ ozs. Extra prizes were awarded to Mr. Smith, of Norwood, and Mr. Carr, of Byfleet; and good fruit were also exhibited by Messrs. Moore, Brown, Hannan, and Hall, the latter exhibiting, but not for competition, a very fine one of 4 lbs. 11 ozs., and another of 5 lbs. Of other varieties, an Enville of 8½ lbs. from Mr. Hall received a first prize, and a Black Prince from Mr. Dwerrihouse, of Heckfield, the second; a large fruit, but not ripe enough, coming from Mr. Young, of Aberaman.

GRAPES afforded the most extensive display, and the exhibitions of the Hamburg varieties by Mr. Meredith, and of the Black Prince from Mr. Hill, of Keele Hall, could scarcely have been surpassed.

In collections Mr. Hill had first prize for a fine one, consisting of Black Prince, Buckland Sweetwater, West's St. Peter's, Lady Downe's, Frankenthal, Black Hamburg, Early Saumur Frontignan, and Royal Muscadine. Mr. Henderson was second with West's St. Peter's, Pope's Hamburg, Mill Hill Hamburg, Frankenthal, Black Hamburg, Black Prince, Trentham Black, Victoria Hamburg, Golden Hamburg, Gromier du Cantal, Muscat of Alexandria, Muscat Hâtive de Saumur, Muscat Escholata, Muscat Hamburg, and Buckland Sweetwater. Mr. Cross, gardener to Lord Ashburton, Alresford, was third.

Of Black Hamburgs by far the finest were those from Mr. Meredith, the bunches being of gigantic size, compact, and perfect in colour and bloom; they were accompanied by some leaves of enormous size. Mr. Wallis, of Congleton, and Mr. Allen, gardener, to J. B. Glegg, Esq., of Withington Hall, received the second and third prizes, having also excellent bunches; but Mr. Meredith's threw all the others completely into the shade. Mr. Hannan, gardener to E. Crawshay, Esq., Merthyr Tydvil, had also three fine bunches weighing 7½ lbs.

With Dutch Hamburg Mr. Meredith was also successful in taking the first prize with large bunches and berries, Mr. Widdowson being second, and Mr. Turner third; those from the latter were too red.

For Frankenthal Mr. Meredith was again first with splendid bunches both as regards size, form, and colour; Mr. Jones, of Cheadle, being second, and Mr. Henderson, of Trentham, third, both of the last two exhibitions being also good.

With Black Prince Mr. Hill left all other competitors far behind, showing the same magnificent bunches which he had at the Regent's Park, and the weight of which was 9 lbs. 5 ozs., and the length of the largest of the three about 20 inches. Mr. Cross was second with the same kind.

In Muscats of Alexandria Mr. Embery had first prize for fine bunches, the ripest shown, whilst Mr. Turner was second and Mr. Turnbull third, the bunches and berries being large but not so well ripened.

In other kinds of Muscats Mr. McPherson, of Radbourne Hall, Derby took a first prize for large and finely-ripened bunches of the Canon Hall Muscat; Mr. Embery was

second for the same variety, and Mr. Turnbull third for fine bunches of Bowood Muscat.

In other white kinds Mr. Mould, Hartsbourne Manor, Watford, had the first prize for Chasselas Musqué, Mr. Hill second for three splendid bunches of Buckland Sweetwater weighing 6 lbs., and Mr. Henderson third for the same kind. Mr. Meredith had good bunches of Golden Hamburgh; and Mr. Cramb, of Tortworth, some of the finest which we have seen of the same kind, but unfortunately they were rubbed.

PEACHES AND NECTARINES.—The exhibitions of these were numerous, and, with few exceptions, the fruit large and well ripened. The best two dishes came from Mr. Dawson, and consisted of *Violette Hâtive* and *Chancellor*; the next best were *Violette Hâtive* and *Grosse Mignonne* from Mr. Young, of Havant. A single dish of *Royal George* from Mr. Watkins, gardener to G. Brassey, Esq., Bramfield, gained first prize, the fruit being of the largest size; and a similar award was made to Mr. Wills, of Oulton Park, for the same variety equally fine, and it was also exhibited in great perfection by Mr. Edward, of Eyewood, who gained the second prize.

Mr. Cross, gardener to Lord Ashburton, had *Elruge* and *Pitmaston Orange* Nectarines ripened to perfection, as evidenced by their depth of colouring, and received the first prize in the class for two dishes; and the second was taken by Mr. Tegg, gardener to W. H. Goschen, Esq., Roehampton, for very fine fruit of the same varieties.

In single dishes Mr. Wills had the first prize for *Elruge*, large and finely ripened; but the fruit being placed on the leaves of *Cissus* discoloured we thought no improvement. Mr. Bannerman, gardener to Lord Bagot at Blithfield, was second with the same kind; Mr. Tillery third with *Red Roman*.

FIGS.—There were few exhibitions of these, the *Brown Turkey* being, so far as we remember, the only kind shown. Those from Mr. Smith, of Syon, and Mr. Pottle, were perfectly ripe and excellent; and good fruit also came from Mr. Robinson, gardener to E. Benyon, Esq., Englefield, and Mr. Henderson, of Trentham.

CHERRIES AND PLUMS.—There was a great lack of competition in these fruits. A fine dish of *Circassian* or *Black Tartarian* Cherries, from Mr. Turner, had the first prize; *Elton* from Mr. Widdowson, and *Black Eagle* from Mr. Beck of Tetworth, having the second and third. A good dish of *Black Tartarian* was also shown by Mr. Thomson, of Stanstead Park. The only exhibition of Plums was Jefferson's, from Mr. Ingram, of Reading.

STRAWBERRIES.—The best four dishes came from Mr. Lydiard, of Bathaston; it consisted of *Victory* of Bath. Gem of the West, and Sir Charles Napier, and Oscar, both very large. Mr. Turner was second with the two last-named varieties, *President* and *Empress Eugénie*. In collections of not less than six kinds, Mr. Widdowson had first prize for remarkably fine dishes of *British Queen*, *Prince of Wales*, *Crimson Queen*, *Sir C. Napier*, *Admiral Dundas*, *Sir C. Campbell*, *Oscar*, *Sir Harry*, *Prince of Wales*, *Myatt's Surprise*, and *Empress Eugénie*. Mr. Turner was second with a collection of twenty-eight sorts, comprising most of the above, *President*, *Rifleman*, *Carolina superba*, and some others.

MELONS.—Mr. Pottle had first-prize in the *Green-fleshed* class. Mr. Turner second in the same for *Marquis of Ailsa*. Mr. Tegg, gardener to Baron Hambro', third, for *King's Green-fleshed*, and first for a *Hybrid Scarlet*; *Scarlet Gem* from Mr. Tillery; and Mr. W. Tegg took the second and third prizes. Melons at present are wholly judged by flavour, and it is not uncommon to see the smallest and least attractive-looking fruit gain the highest prize; but whilst we quite agree that flavour should principally guide the decision of the Judges, we still think that appearance should receive some consideration, and that it would be desirable to institute a class in which flavour and appearance combined might be the test of merit, flavour counting, say, for two points, and appearance for one point.

MISCELLANEOUS.—Some fine orchard-house trees in pots were shown by Messrs. Lane & Son, and Mr. Cattermole, of Tooting Common, both of whom received first prizes; also, from the Society's Garden at Chiswick, and Mr. Kaile, of East Horsley Towers, who had Plums and Peaches; the other collections consisting of Apples, Pears, Plums, Cherries,

Figs, and Peaches. Some well-ripened Tomatoes were exhibited by Mr. Terry, the Hyde, St. Albans; a seedling Melon called *Monarch*, and weighing 10 lbs. 11 ozs., by Mr. Henderson, of Trentham; some excellent Strawberries by Mr. Marcham; Laxton's *Early Prolific Pea*, which turned out to be nothing but *Dickson's Favourite*; and some seedlings, an account of which will be found in the proceedings of the Fruit Committee.

THE NATIONAL ROSE SHOW.

I COULD quite understand, when I saw the Exhibition to-day, why it was that the Rose Show had been tacked on to the third great Exhibition. Retrenchment, I presume, was the order of the day. No prizes for Orchids, nor—as it has, I know, been suggested by one of the most active members—*Zonale Geraniums*; none either for show *Geraniums*, which were shown so well at the Regent's Park last Wednesday; and hence one mass of green, very refreshing no doubt, filled the nave, fine-foliaged plants and Ferns forming the great bulk of the things sent. And had it not been for the Roses the Show would have been poor indeed; while the Fruit, separated far from the others, lent neither its fragrance nor its beauty to the great body of the Exhibition. Why it could not have been arranged in one of the contiguous courts I could not understand.

My business is, however, with the Roses, ever beautiful and charming as they are. I feel compelled to say that, on the whole, Roses have not been shown in first-rate condition this season. Neither at the Crystal Palace nor to-day had they that freshness and contour which one likes to see them always possess, too many open eyes and battered faces suggesting ideas of late hours and an over-supply of moisture. Some exquisite blooms were, no doubt, exhibited; but I am speaking of them as a whole. As far as to-day's Show was concerned, the Amateurs were decidedly in the first rank, and Mr. Hedge, as usual, in the first rank of Amateurs. Some of his flowers were very exquisite. He has an immense stock; and, with his thorough knowledge and skill, he has advantages which make it a difficult matter to vanquish him.

The new Roses were as usual those most eagerly looked after; and it is only another instance of the uncertainty that hangs about Rose-growing that the same flower in different boxes bore a totally different character, and would hardly have been recognised as the same variety. After a careful scrutiny of the various stands, and the new Roses generally, I think that we may set down Mr. Standish's *André Leroy*, Mr. Geo. Paul's *Lord Canning*, and *Le Rhone* (*Guillot* fils), as the three best new Roses. The first is a seedling reared by Trouillard of Angers, and named after his employer, M. Leroy. It was figured in the *Florist and Pomologist*; its shape and contour were well given, but the colouring fell very far short of the reality. It is a thick, fine-petalled flower, of excellent shape, and of a rich dark velvety crimson, and of good habit. *Lord Canning* is a flower somewhat of the build of *Comte de Nanteuil*—a bright pink with large petal. *Le Rhone* is very much of the style of *Senateur Vaisse*, with a dark shading in it.

While on the subject of new Roses I may mention that I received a few days ago from my friend, M. Margottin, of Bourg-la-Reine, a box containing blooms of two new flowers he purposes sending out this autumn: one is a splendid flower, a seedling of *Louise Odier*, crossed with a dark *Hybrid Perpetual*, having the exquisite shape of its parent, and retaining (in a *Bourbon*, a great object), a delicious fragrance—one or two petals in a letter quite perfumed it. It is of excellent habit, as I saw when in the raiser's garden. The colour is a deep crimson. I feel persuaded that this will be a great acquisition.

I now proceed to the stands of new Roses. The first prize was awarded to Mr. W. Paul for the following:—*Maurice Bernhardt*; *Robert Fortune*, very globular; *Prince Camille de Rohan*, very dark and fine; *Charles Lefebvre*, good; *Professor Koch*, dark and double; *Louise Darzins*; *Louise Margottin* (1863), pretty and good; *Beauty of Waltham*, good; *Turenne*; *Gloire de Chatillon*, like *Madame Masson*; *Vicomte Vigier*, good; *La Brillante*, very fine; *Mademoiselle Emsin*; *François Lacharme*, excellent; *John Hopper*, good; *Madame Ernest Dreol*; and *Madame Charles Wood*.

Mr. B. R. Cant was second with Souvenir de Comte Cavour; Baron Adolphe de Rothschild, good; Olivier Delhomme; François Lacharme; Vicomte Vigier; Vulcain; Charles Lefebvre; Reynolds Hole, a good pink; Monte Christo, dark; Madame Charles Wood; John Waterer; La Brillante; excellent; Madame Ernest Dreol; Grégoire Bourdillon; Souvenir de Mons. Rousseau; Wilhelm Pfitzer, dark; and Madame Boutin, fine.

Messrs. Paul & Son were third with President Lincoln, a promising flower; Le Baron Rothschild; Prince Camille de Rohan, very fine bloom; Lord Clyde, good; Madame Caillat; Le Rhone, good, dark; Lord Canning, a fine new English Rose of Messrs. Pauls' rearing; Monte Christo; Gloire de Bordeaux; Olivier Delhomme, very good; Belle de Printemps, curiously mottled, but bad shape; Baron de Rothschild; Wilhelm Pfitzer; Louise Darzins; Souvenir de Comte Cavour; Paul Despard; and Princesse d'Orléans.

Mr. Standish, of Bagshot, had Grégoire Bourdillon, Souvenir de Comte Cavour, Madame Standish, Charles Lefebvre, Madame Boutin, Vicomte Vigier, Madame Charles Wood, Mrs. Dombrain, Marguerite Appert, Maréchal Vaillant, André Desportes, John Standish (a good bloom), André Leroy (fine), Catherine Guillot, J. F. Lombard, Reynolds Hole, Vulcain, and Alexandre Dumas.

In Mr. Keynes' stand were Souvenir de Comte Cavour, Gloire de Bordeaux, François Lacharme, Robert Fortune, Monte Christo, André Desportes, Marguerite Appert, Paul Despard, Maréchal Vaillant, Charles Lefebvre, Turenne, Mlle. Julie Daran, John Standish (very good), Le Brillante, Alphonse Damazin (good), Richard Smith, Madame C. Wood, and Olivier Delhomme.

Mr. Cranston had La Brillante, Madame Caillat, Camille de Rohan, Comte Cavour, Wilhelm Pfitzer, Murillo, Le Rhone, Richard Smith, Alphonse Damazin, Belle de Massifs, Alfred de Rougemont, Archevêque de Paris, L'Esmeralda, Duc de Bassano, Souvenir de M. Rousseau, Comte de Courcy, Vulcain, and Lecrosnier.

Amongst the Roses there of last season, there are evidently some which are destined long to remain in our catalogues. Such flowers as Souvenir de Comte Cavour, Prince Camille de Rohan, Maréchal Vaillant, Madame Boutin, Madame Charles Wood, Alphonse Damazin, Adolphe Noblet, Charles Lefebvre, and François Lacharme are indispensable; while Wilhelm Pfitzer, Souvenir de Lady Eardley, and Vicomte Vigier stand well nigh equal to them if not quite. Thus a dozen good Roses may safely be set down as the production of 1861. If there is a defect, it is that as a rule they are not quite full enough, and thus apt at times to open too much. Madame Charles Wood is the most extraordinary flower for lasting that I know. I have had blooms of it cut for a week without falling, while La Brillante has just the opposite tendency; the colour flies very soon. Of them all I should from present appearances be inclined to fix on François Lacharme as the best of the lot.

I had intended to have given this week the details of the prizes in the other classes, but must reserve it for the next issue.—D., Deal.

BHOTAN RHODODENDRON AT REDLEAF.

YOUR impression of the 23rd of June has only just come to hand, or I would sooner have replied to the courteous request of "A DEVONIAN," to say that the Bhotan Rhododendron alluded to expanded the first bloom on the 20th inst., and the last on the 28th, thus coming unfortunately between two meetings of the Floral Committee, to whom I had intended to submit it.

I think it is likely to prove identical with the one described by your correspondent, as it is a large trumpet-shaped lower, pure white, with an orange throat, and a most agreeable and delicate fragrance. Each bud produced three blooms.

With regard to its hardiness, I cannot speak with the necessary certainty, our plant having never been subjected to the open air in the winter; but at that season it had only the protection of a small lean-to, and was never covered. Judging from appearance, I should say that it is quite as hardy as the Sikkim varieties I mentioned before.

How it can be purchased I cannot say. This plant was

presented to my employer by a lady in Scotland, and labelled "Rhodo from Bhotan." Perhaps these notices may elicit some information on that subject.

This has been a very fine season for the Sikkim Rhododendrons out of doors, and they have made a remarkably clean and handsome growth, owing to the absence of those piercing morning frosts in April and May.—JOHN COX, Redleaf.

PROPAGATION BY EYES.

THE facility with which certain plants are reproduced from buds or eyes induces me to give a short detail of my experience in this mode of propagation, laying no claim to originality, but simply to aid those who may not have practised it.

VINE EYES.—To propagate the Vine by the means of eyes, procure a sufficiency of the wood of last year's growth—that which is removed by pruning, selecting the medium-sized well-ripened wood. Commence with the bottom eye: holding the shoot perpendicularly in its natural position, and having the eye turned from you, place the blade of the knife some quarter of an inch beneath the eye, drawing the knife cleanly through in a slanting downward direction. Next turn the whole branch directly upside down, cutting the eye clean away from the same by drawing the knife cleanly through the wood—in its present position closely beneath it—also in a partially slanting direction. When finished the eye should in form somewhat resemble



Fig. 1.

fig. 1. Having the eyes thus properly prepared, proceed to pot or pan them. I am partial to the

latter, as when moderately shallow I can the more readily command an evenness of temperature, whether the heating materials be too hot or slightly the reverse, as, by simply plunging the pans in the latter case, or placing them upon the surface of the material in the former, I can readily command the desired heat. But whether pots or pans be chosen take care to crock them well, as an excess of moisture around the eyes is most injurious to these.

The soil I use is formed of two parts good yellow loam, one of peat, the same of leaf mould, with sand in quantity sufficient to make it nicely porous. I sift it, because by doing so I am enabled better to divide the roots of the plants than if the soil were rough. Having the pots filled, press firmly each eye in the soil about 2 inches apart, taking care not to have the eye buried beneath the soil, though no part of the wood should be visible. If the eye be not fully exposed, it is liable to damp or rot off, even after it has made a start to grow.

Give gentle bottom heat, say 50°, increasing 5° weekly until the maximum of 70° is attained. Care should be taken to keep the heat, both above and below, at a moderate temperature, for an excess of heat often causes the eyes to start prematurely, and before the wounds have rooted, or even formed the callus.

After the first fortnight or so, when it may be supposed the callus is formed or that they have made good progress, an advance of heat with a nice growing atmosphere will be beneficial to them, continuing thus until they have made reasonable growth and you surmise they are getting in a pan, with a view to their being readily parted for the purpose of potting-off singly. Then small-sized pots having or substantial crock in the bottom, good yellow loam, and well decomposed dung, &c., will suit them well, and into these they should be carefully potted.

THE ORANGE, CITRON, and CAMELLIA may be thus propagated. About the first week in March pick out a well-ripened shoot, the growth of the last or preceding year. From this with a sharp knife simply cut out the leaf and eye, having at their base a small portion of the wood, just sufficient to give it the appearance of a cutting having a small heel to it. Procure good loam, peat, and decomposed manure in equal parts, with a fair proportion of silver

sand, and into this they should be firmly planted, in pots or otherwise, to be placed upon a gentle hotbed, giving an advance of heat eventually, as I have already explained with reference to the Vine.

THE HOLLYHOCK.—An essential point is procuring medium-sized well-ripened wood having little central pith. I mark a few stalks some days before requiring them, pinching the point off from each, which causes the buds to become slightly active and prominent. I then—having the whole stalk divided into three or four pieces, to admit of its being more readily handled—cut out the eyes, commencing with the lowermost ones, cutting the entire bud, leaf, &c., away from the stem an inch or more above it, severing it clean across. Then finish off the base at the joint and base of the leaf precisely as all cuttings are made, taking care, however, not to cut too closely, or to loosen the leaf or otherwise injure it during the process of manipulation.

Use a compost of one part of good yellow loam, one of leaf mould, and one of sand. Place six or eight eyes in a 48-pot, keeping the leaves up where necessary by a support. At first a gentle heat should be given, to be advanced eventually as explained above; though where no heat happens to be at command they often root well plunged in sawdust, packed in a frame or box placed in a shady situation and turned northward. They should when rooted be properly potted-off, &c.

THE ROSE.—To propagate the Rose by this means, procure shoots similar to those from which eyes would be taken in the process of budding. Simply cut the wood directly across about half an inch above and below the leaf, eye, &c. Plant in soil, and adopt the treatment recommended for the Hollyhock.

THE DRACENA is easily propagated by cutting in pieces the leafless portion of the upright stalk, though I believe of our fellow labourers few would like to destroy a good plant in the process. My real object, however, in introducing this genus is to refer those who have a plant to the very base of its main stalk, where will be found small growths having an appearance not unlike the main eyes of a Jerusalem Artichoke. At times two or three of these are seen attached to each other. They should be cut apart, and placed in free sandy soil in a good brick top and bottom heat, when they will be seen to shoot up readily, each forming a plant. Under this process the best variegated kinds appear to lose their chief merit, at first assuming the uniform colour of the original species, though they become beautifully variegated the second season.

ALOCASIA METALLICA.—We give the mode, which is the simplest possible. Just suppose the metallic-looking *Alocasia* to be a *Richardia aethiopica*. Reduce this to a small plant and cut the bottom of the plant away, dividing it into as many little pieces as you can perceive eyes in the same, leaving where practicable the small roots or rootlets found attached to each, potting, plunging in heat, &c. But let those who are not quite so venturesome simply take the soil away carefully from the base of the main portion of the plant, cut a reasonable bit off and pot it, carefully repotting the plant, thus proceeding as the plant continues to grow, and soon a good stock will be their reward.—W. EARLEY, *Digswell*.

CHIEF GARDENS OF GREAT BRITAIN.

We have so repeatedly been asked for a list of gardens having attractions worthy of a visit at the cost of some expenditure of money and time, that we have determined to make a commencement, and to ask of our readers to furnish us with similar lists. The sooner they favour us with them the more useful will they prove, as the season for seeing such gardens in their gayest array is at hand.

We have been asked also to state where and what fee should be paid for the pleasure thus afforded, and for the time of the gardener devoted to the visitor; but upon this point we can give no information. The practice varies so much that no rule can be stated as generally applicable. A gardener visiting such establishments should pay nothing under any circumstances, and the feelings of all other parties we think might be considered, if at all such gardens a book was kept in which visitors must inscribe their names, and on the table by the side of that book were copies of a pam-

phlet, with a plan of the garden, and a short description, price 3s.

The gentleman who has favoured us with the following list adds as a note:—"Those named are all first-class. Many others well worth visiting might have been included, but I have kept the list select."

PRINCIPAL GARDENS IN NORTHUMBERLAND.

Name of Residence.	Proprietor.	Gardener.	Nearest Railway Station.
Alnwick.....	Duke of Northumberland...	Mr. Bailey.....	Alnwick.
Arnot.....	H. Shum Storey, Esq.	Mr. Elsworth ...	Killingworth.
Belsay.....	Sir Charles Monck, Bart.	Mr. Jackson.....	Newcastle.
Beaufort.....	Wm. Cuthbert, Esq.	(Unknown).....	Corbridge.
Creswell.....	A. Creswell, Esq.	{ Mr. Forsyth (Flower Depart.) Mr. Robson (Fruit Depart.) }	Longhirst.
Felton Park...	Thos. Riddell, Esq.	Mr. Crossley.....	Acklington.
High Gosforth	Eustace Smith, Esq.	Mr. Jno. Hall ...	Killingworth.
Holeyn Hall...	Edward James, Esq.	Mr. Geo. Cook... Wylam.	
Meldon Park...	John Cookson, Esq.	Mr. C. Graham... Meldon.	
Mitford.....	Mrs. Mitford.....	Mr. Jas. Taylor. Morpeth.	
Newton Hall...	Mrs. Widdington.....	Mr. Davison..... Alnwick.	
Sandhoe.....	Rowland Errington, Esq.	Mr. Marshall ... Corbridge.	
Wallington...	Sir Walter Trevelyan, Bart.	Mr. Hedley..... Meldon.	
Wolsington...	Matthew Bell, Esq.	Mr. W. Lawson. Killingworth.	

A FEW OF THE BEST GARDENS IN DURHAM.

Lambton.....	Earl of Durham.....	Mr. Stephenson	Fencehouses.
Gibside.....	Rt. Hon. Wm. Hutt.....	Mr. Scutt.....	Scotwood.
Ravensworth..	Lord Ravensworth.....	Mr. Moulton.....	Newcastle.
Raby.....	Duke of Cleveland.....	Mr. Short.....	Barnard Castle or Winston.
Southend.....	Joseph Pease, Esq.	Mr. Richardson.	Darlington.

These gardens may be visited any day by applying to the gardener.

ROYAL HORTICULTURAL SOCIETY.—JULY 1.

FLORAL COMMITTEE.—The entries of florists' flowers on this occasion were very limited, and of no particular interest. The new plants were numerous, and chiefly from Messrs. Veitch, of Chelsea. The names and awards made to the new plants will be given in our next Number, our memoranda not being at this moment before us.

Mr. Turner, of Slough, sent two seedling Pinks—one named Rev. George Jeans, a heavy-edged rosy crimson flower, with well-arranged petals, was awarded a first-class certificate. The other seedling was not considered any advance on other varieties in cultivation.

Mr. Francis, of Hertford, exhibited a very dwarf-habited Scarlet Pelargonium with remarkably small green foliage, the trusses of flowers not very bright nor of good form. The plant was commended as useful for decorative purposes.

Messrs. E. G. Henderson exhibited their superb collection of Variegated Zonale Pelargoniums, which for richness and brilliancy of colouring are unequalled. Mrs. Pollock and Sunset, so well known to the floral world, received first-class certificates in 1861. Lucy Grieve and Italia Unita were on this occasion awarded first-class certificates. Lucy Grieve is after the style of Mrs. Pollock, but with variously-tinted zones of brighter colours, and the plant is of more robust habit. Italia Unita is a very brilliant white-foliaged variety. The shaded zones of dark crimson make it very conspicuous and distinct.

Mr. Bull sent several seedling Zonale Pelargoniums. One, named the Clipper, was a scarlet flower of excellent form, which was requested to be shown again, the specimens sent not being in condition.

With the exception of a stand of seedling Pansies, which at this late season were out of character, and a seedling Rose which was very far behind the Roses of the present day, there were no other flowers worthy of notice.

FRUIT COMMITTEE.—There were a few subjects before the Sub-Committee of the Fruit Committee at the last great Show, consisting principally of seedlings.

Mr. Turner, of Slough, again sent his seedling Strawberry President. On this occasion it was much larger than it has ever been exhibited previously, and is certainly a fine-looking fruit. The flavour, however, did not come up to the standard of what the Committee thought first-rate; but they were, nevertheless, of opinion, that on account of its size and solid flesh it would be a good market variety.

Mr. Lydiard, of Batheaston, near Bath, also sent two seedling Strawberries, both of which were fine-looking fruit. Gem of the West is a fine bright scarlet colour, with a good deal of the Pine flavour in it, but it lacks sugar. This deficiency may, however, be attributable to the season. Victory of Bath is a large darker-coloured variety, and its flavour was not remarkable.

Mr. Ruffet, gardener to Lord Palmerston, Brocket Hall, sent a seedling Strawberry called The Premier, which, judging from the plant exhibited in a pot, bears immensely. The fruit is large, dark-coloured, and the flavour is very good.

Mr. Tillery, of Welbeck, sent a seedling Nectarine raised from the Elruge. It is of medium size, and in colour closely resembles its parent, but the flesh is rather more stained next the stone than in the old variety. It is a good sort, but scarcely sufficiently distinct.

Mr. Archibald Fowler, gardener to Lord Dalrymple, Castle Kennedy, Stranraer, N.B., sent fruit of a very large Fig, which weighed 6 ozs. It was received without a name, and the variety has been grown at Castle Kennedy for about a century. It appears to be the Large White Genoa. It is of turbinate shape, pale greenish-yellow colour, with a brownish tinge on the apex of the fruit; the flesh brownish-red and of good flavour, but not first-rate.

Mr. Keynes, of Salisbury, exhibited bunches of a Grape introduced from Corfu. They were very large and shouldered, the berries of good size, well set, and of a somewhat ovate shape, green, and with a transparent skin showing the texture of the flesh through it. It was not sufficiently ripened for a correct judgment to be formed of its qualities.

Mr. J. Fleming, gardener to Her Grace the Duchess of Sutherland, at Clevedon, sent a seedling Grape raised from a cross between White Frontignan and Royal Muscadine. It combined the properties of both parents; but as the plant is yet young and the bunch was hardly ripe, it was not in condition to form a correct opinion of its merits.

Mr. Rivers, of Sawbridgeworth, exhibited a seedling Early White Nectarine raised from Victoria Peach; the flavour of which was piquant and gave evidence of being improved by being more highly ripened. He also had an Early Orange Nectarine a fortnight earlier than Pitmaston Orange and with the same flavour; and a seedling Hautbois considerably larger than the Prolific. It is called the Royal Hautbois, bears abundantly, and is a great improvement on the old variety if its flavour is produced equally good.

Mr. Laxton, of Stamford, exhibited two dishes of his seedling Early Prolific Pea, which proved to be Dickson's Favourite. In another dish, Mr. Laxton exhibited a small frame variety as Dickson's Favourite, which he is evidently growing in error for the true sort.

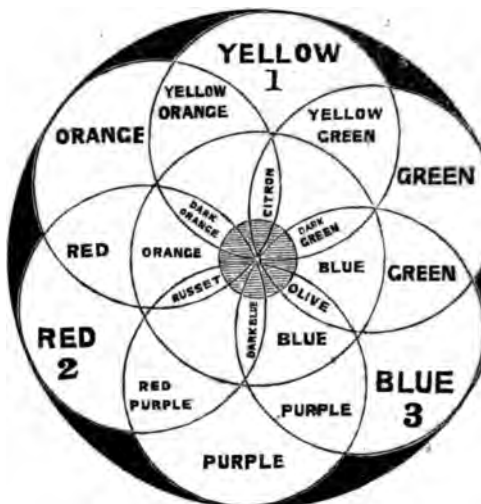
THE MELODY AND HARMONY OF COLOURS.

ACCORDING to the commonly-adopted doctrine, there are three primary colours, red, yellow, and blue. The combination of these in certain proportions yields white. The absence of them all is black. These primaries, mixed together two and two, produce what are called secondary colours—viz., orange, from the mixture of red and yellow; green, from the mixture of yellow and blue; and purple, from the mixture of red and blue. From the combination of the secondaries arise three tertiary colours—citron, from the mixture of orange and green; olive, from the mixture of green and purple; and russet, from the mixture of orange and purple.

The language of music has been applied to colours, and colourists talk of the melody of colours, and the harmony of colours. Colours are said to be in melody when two contiguous tints, or shades, or hues, run insensibly into each other—as when red slides into pink and white, and purple leeps into dark purple, or merges into red-purple and red. Two different colours are said to be in harmony when their association is felt to be pleasant to the eye.

Two colours are said to be complementary when they together make up the white beam. Thus green and red are complementary, as also purple and yellow, orange and blue. The eye feels pleasure in seeing colours in melody, or melting into each other. It also feels a pleasure in contemplating certain associations of different colours. In parti-

cular the eye is pleased when complementary colours beside each other, or are under the view at the same time. Complementary colours contrast the one with the other, and are always in harmony. It is necessary to add that complementary colours associate pleasantly with every other colour; so does the following diagram is constructed with a view



showing what colours are complementary to each other. The figure we have three primary colours—red, yellow, and blue; and the three secondaries, orange, green, and purple, with the hues of secondaries on either side. We have the tertiaries, citron and russet. The diagram is constructed that the colours in corresponding opposite circles are complementary, and so in harmony. Thus—red and green, blue and orange, yellow and purple are complementary colours. According to the hue of a particular secondary, so is also the hue of its complementary. Thus a pure purple requires a yellow, but a red-purple requires a yellow-green, and a blue-purple a yellow-orange, the complementary colour; and so of all the other secondaries. The tertiary citron is in harmony with blue, purple, purple requires a yellow, but an olive a dark green, and russet a dark green. These principles are taught in every school of art, and are attended to in the manufacture of all our finer fabrics in which colour is an element of beauty, as in dresses, carpets, hangings, and furniture of various descriptions.

Green Harmonising with Red and Russet.—The softness of which the Author of nature has been pleased to give to the tree and herbage, is by far the most abundant in the vegetable kingdom. Now, wherever the flower plant is red, it associates agreeably with the leaf. Flowers of the Rose, and many Pinks, Geraniums, Pinks, Malloes, Lychnises, and dozens of others, contrast strikingly with the foliage of the plants on which they grow. The eye delights to see the fruit of the Cherry, the red of the Hawthorn, and the berry of the Holly, the Moth of the Ash, and other plants peeping forth from the green leaves.

Purple Harmonising with Yellow and Citron.—This second most prevalent harmony in the vegetable kingdom. So far as we have been enabled to observe, purple of various tints, shades and hues, such as red-purple where there is a preponderance of red, and blue-purple where there is a preponderance of blue, is the most frequent colour of the petals of plants. In beautiful contrast, we often find in the centre of the flower. Thus in the garden Polyanthus and many varieties of Auricula, the outer rim of the flower is purple, and an inner circle is yellow. Purple and yellow are also commonly associated with the flowers of Grasses.

Orange Harmonising with Blue and Olive.—This harmony is less frequently met with in the vegetable kingdom, but is very common in the sky. A pure blue, however, is to be met with in the flower in any of the organs of plants. Most of the flowers called blue have more or less a red tinge. In the flower of the Forget-me-not, which ever we see so cheerfully, there is a border of blue-purple

centre or throat of orange-yellow. In the Pansy, so rich and soft, that it has obtained the name of "Heart's-ease," we have yellow and purple of various hues and degrees of intensity, brightened by a mixture of white. In the Daisy, described as "crimson-tipped," by Burns, there is the yellow disk, harmonising both with the white ray and purple on its tips. These flowers are favourites with all classes, peer and peasant, old man and young maiden, countryman and townsman. They pleased us in our childhood, when we seized them, and sought possession of them so eagerly, but found them fading, like all earthly enjoyments.

The frequent juxtaposition of complementary colours must have a physical as well as a final cause. If it be asked, What this is? we are inclined to answer by asking another question, the answer to which may possibly throw a light upon the first. When a beam of light falls on a green leaf, the green is said to be reflected and the red absorbed; but we ask, What becomes of the red? When the beam falls on a purple petal, the purple is said to be reflected and the yellow

absorbed; but what becomes of the yellow? Are the red and yellow in these cases absolutely lost? If these constituents of the beam be lost, they are the only powers in nature which are. In this world of ours, nothing which has existed is lost; as nothing new absolutely comes into being. It is now a received doctrine, that the heat absorbed by plants, in the geological era of the coal measures, is laid up in fossil deposits, and may come forth in our epoch when the coal is ignited. May we not suppose, in like manner, that the red absorbed by the plant, when the green is reflected by its leaves, will come forth, sooner or later, in some form—in young stem, flower, or fruit; and that the yellow absorbed by the flower, when the purple is reflected, will come out in the yellow pollen, or in some other form? We have thought, at times, that as the pure white beam, when it reaches the earth with its atmosphere, is divided into several rays, and that no one of these is lost, and as they will come forth sooner or later, we have thus a harmony of colours in nature.—(*American Gardener's Monthly*.)

UROPEDIUM LINDENII.

If this is not the most brilliant, it is at least the most singular of terrestrial Orchids. For gardens it is a rare curiosity, for botanists a perfect wonder, and an object of just pride for the enterprising cultivator who introduced it. The characters of the type may be stated in a few words:—It is a *Cypripedium*, the labellum of which, instead of being formed like a slipper, extends in that of a tongue, becoming narrow and extending downwards, like the other divisions, in the form of a narrow band. The sepals are of a yellowish-white colour; the two inferior are joined together in one, about 2 inches long, and striated with greenish nerves. The petals (including the labellum), extend to at least a foot in length: they are pale, striated in face of their internal base, having a spot on the two posterior corners or horns of the depressed caruncle or protuberance which surmounts the gynostem or column.

This noble plant is a native of New Grenada, where Mr. Linden discovered it 1843, in the territory of Chiguara, in the small woods of the Savannah, which rise on the Cordilleras to an altitude of 1650 metres, or fully 5500 ft., and overlooking the vast forests of Maracaybo. It has been described by Dr. Linden from a dried specimen; and was first flow-

ered for the first time in Europe, in the rich collection of M. Pescatore, at his Château, Celle, near St. Cloud.

It is worth while to consider for a moment one of the most curious examples of that law which is justly called the law of balance in the organs (of plants). According to a fundamental rule of symmetry in their flowers, Orchids should have a verticil of three stamens, alternating with the interior parts of their perianth. Now, in consequence of a normal abortion with the generality of these plants, the posterior stamen exists only in a state of fertility; the two lateral ones having disappeared, or being only present in a state of sterile protuberance on the gynostem or column. In the *Cypripedium*, *Uropedium*, the posterior anther is replaced by a fleshy caruncle, but to compensate for this, the two lateral anthers exist in a perfect state. If we add the one-stamened flower of an Orchid (*Orchis*), to the two-stamened flower of the *Uropedium*, we obtain the three-stamened flower of the ideal and symmetrical type of the Orchid family; and thus, in botanical arithmetic, as in ordinary calculations, two added to one make three.—(DR. PLANCHON, *Flore des Serres*.)



MAKING A STRAWBERRY SOIL.

THE remarks made by my esteemed friend, Mr. Robson, at page 432, in reference to the repeated failures experienced by "A. Z.," induces me to bring to your notice a case in my own experience, where an apparently similar difficulty was successfully overcome. It occurred in the garden of a gentleman in my neighbourhood.

He was one day lamenting that he could not grow his most favourite fruit, Strawberries, in his garden, try what he would, and begged me to go over to advise him. I did so, and found the soil to be of the same light sandy nature as that described by your correspondent; and I have found from experience that such soils when highly manured do produce very fine foliage indeed, but very little fruit—in fact, they "run to straw," as a farmer would term it.

My advice was, to take off the top spit and supply its place with 9 inches of clay and strong loam, such as is used in making bricks, and incorporate it well with the subsoil. This was done, and nothing could be more gratifying than the success attending the operation, as the plants produced fine fruit in great abundance, and I was glad to hear that the example had been followed by several other persons in the immediate neighbourhood.—JOHN COX, *Redleaf*.

WEIGHT OF MUSA CAVENDISHII FRUIT—ORIENTAL ORCHARD-HOUSE.

HAVING seen in your Journal two notices lately of the weight of heads of fruit of the *Musa Cavendishii* or Banana, they have stirred up old recollections about a head of the fruit I grew when I was a journeyman some ten years ago, and of a singular incident that happened concerning it, which fixed it upon my memory.

The said head weighed, when freed from all superfluous stem, 56 lbs., and numbered 220 or 222 pods of fruit. Knowing that the Banana is still grown extensively in the same place, I wrote to the gardener, and the following is an extract from his reply:—

"Coodham Gardens.

"Regarding the Banana, I think that I have a better fruit just now than either of those you mentioned. The number of swelled pods are 212, and which I think will weigh close on 50 lbs. I weighed a fruit last year which was 53 lbs. I expect this fruit to be ready towards the latter end of July, or the beginning of August.—E. A. STEWART."

Writing the above reminds me of an article written by me upon the cultivation of the *Musa* as a hothouse fruit for a certain gardening periodical, which was not inserted because, as the editor said, it was "not of general interest." Perhaps now that we have had a good deal of tilting and firing of blank cartridge upon the orchard-house question, might it not be worth while to prefix the word "oriental," and try how they would succeed? A practical knowledge of the habits of such fruits would soon form an idea of what an "oriental orchard-house," should be, and the skill required in their cultivation would be about a minimum.—ALEXANDER STORRIE.

P.S.—I have grown various varieties, but the *Musa Cavendishii* is the best. *M. sapientum* grows taller, and has not such large heads of fruit.

DWARF SWEET PEA.—I lately sent a query asking why it is that a dwarf eatable Pea has been obtained, and that a dwarf Sweet Pea has not. Can botanists or florists assign a reason? At present neither have replied to it. Might not hybridising the dwarfest eatable Pea with the Sweet Pea, produce some change?—MATTHEW FITT.

EARLY CELERY.—The working men of Dewsbury have long been celebrated for the production of early Celery. Twenty years since it was considered very early if it was on the table at Dewsbury Feast (July 25), now it is not considered to be so unless it is dug up in June. Last year the earliest was dug up the last week in June, this year the earliest was dug up the last week in June. The length of the best

stalk was 21 inches long, blanched 10 inches, and of a proportionate thickness. It was grown by a working man, William Clegg.—S.

THE GOOSEBERRY CATERPILLAR AND ITS HABITS.

NOTICING a remark made by your correspondent "R. F.," on the 2nd of June, in his "Doings of the Last Week," respecting the non-appearance of the gooseberry caterpillar and his attributing the disappearance to the agency of birds, I am induced to offer a few facts that have come under my own observation.

Like "R. F.," as soon as the trees were in full leaf and the weather genial, I commenced examining the trees to see if the caterpillars had made their appearance, and I found them in various stages of existence. Some appeared to be just issued from the egg, and had made many small holes through the leaf; in most instances each grub had eaten out a hole the size of a small shot. Other caterpillars were more advanced, some being half and others three-fourths grown, and there were some that had apparently attained their full size. Amongst the latter there were a few of a pale green colour; and adhering to the leaf they were on, or close by, was the dark skin.

I then began to look for the parent insect or fly, but could discover nothing but a black fly, which was very numerous; and in most instances, upon the trees being touched or an attempt made to capture them, they fell to the ground and were lost. At first I began to think they might be the parents, and, if so, could see no means of saving the trees and crop but by catching and killing them. I consulted all the works I had on natural history, but could find no other information than that these caterpillars are the produce of a species of saw-fly, which deposits its egg on the leaf of the tree; the egg in course of time giving birth to a caterpillar; the caterpillar, after attaining its period of existence, falling down from the tree and burying itself in the earth till the following spring, then bursting from its crusty shell and seeking the young leaves to perform the like offices again. I therefore resolved to try some experiments upon them, and for that purpose I procured two full-grown caterpillars and placed them under a bell-glass on the 23rd of April.

After the caterpillars had changed their skins and fallen from the leaves on which they had been previously feeding, I began to examine the sand in the flower-pot to ascertain their whereabouts, and I found the one that changed first directly under the leaf from which it fell, buried about an inch from the surface. The other I unfortunately damaged with the point of a knife used to discover them, probably owing to its not having attained sufficient strength of shell. I then placed them on the top of the soil in a smaller flower-pot, covering them with a bell-glass as before simply for convenience.

On Saturday, May 16th, about eleven o'clock, I had the gratification of seeing a fly under the glass, which I was satisfied had come from one of the chrysalises. It was about one-third of an inch in length, the fore part of its body of a dirty yellow, and the tail of a bright yellow colour, with transparent wings very similar in appearance to the fly that is the cause of galls upon the Oak trees in many places.

At one o'clock I collected some more cuttings; and, after proceeding as in the former instance, I placed the fly under the bell-glass with them. The fly now seemed less restless than before, and began to walk about the leaves apparently with pleasure. After watching it for a few minutes I observed it walk to the under side of a leaf, and, after examining it for a short time, it walked to the top of the leaf and then commenced laying its eggs along the midrib in the direction from point to footstalk. The number of eggs deposited on the midrib was about twelve. Then the fly went to the four side-ribs of the leaf, and there deposited from eight to ten eggs on each rib, amounting in the aggregate to fifty-two. A number of eggs were laid on other leaves, but they were not so regularly placed. Their total numbers, I believe, were about 200. The eggs are of a transparent white colour, about one-sixteenth of an inch long, with a dark spot at one end, and they are deposited with great regularity about the same distance apart.

On Friday, May 22nd, I fancied there was a slight alteration in the colour of those eggs that were laid first, and about eleven o'clock on Saturday, 23rd, they were evidently producing caterpillars, for they could move about. After preparing a flower-pot by filling it with silver sand, &c., as if for choice cuttings, I selected three vigorous shoots from a healthy Gooseberry tree; and, after carefully inserting them, I introduced the two full-grown caterpillars, making them secure by putting a bell-glass over them and pressing the same into the sand to prevent their escape from the side. They soon began to eat greedily, and appeared quite at home, consuming at the rate of a full-grown leaf in twelve hours.

On the next day (the 24th) one began to appear torpid, and by the middle of the day had changed its skin, leaving it on the leaf it had been feeding from the previous day. From the size of the leaf that remained and the amount consumed by the other, I presume it had not eaten anything for the last twelve hours. By changing its skin it had assumed a pale green colour and remained in this state three or four hours, taking no more food, and then fell from its position and buried itself in the soil—which it does very quickly—and in about six or eight hours it was covered with a crusty shell.

The other caterpillar did not change its skin till the 28th, but the operations were the same; but I found it took about twelve hours from the time it changed its skin till it became a chrysalis.—J. PATEY, Gardener, Loseley Park, Guildford.

CULTURE OF ONCIDIUM PAPILIO.

In answer to your correspondent, "ORCHIDOPHILUS," the above plant will thrive either on a block or in a pot, provided the proper treatment is given. We have found it succeed well on a block plunged into a pot, so that the block is 3 or 4 inches above the pot's margin, filling the pot with drainage, and a little sphagnum moss or rough peat on the top.

It also succeeds well on a block of wood suspended from the roof, but not too near the glass in winter, as the cold is apt to affect it. If grown in this way a little live sphagnum moss should be placed on the block, and the plant fastened on with some copper wire and small nails.

This *Oncidium* does not require a high temperature: from 55° to 60° in winter is sufficient heat; and in spring and summer it may rise from 65° to 75°, and more by the heat of the sun, from which the plant must be shaded. The plant requires a good supply of water in the growing season, and when at rest just enough to keep the bulbs in a plump state, for if allowed to shrivel it will be a long time before returning into a healthy condition.—B. S. WILLIAMS, *Paradise Nursery, Holloway.*

EXCLUDING GARDENERS IN IRELAND FROM AN EXHIBITION.

It seems to be quite a common proceeding in Ireland not to allow gardeners to enter the place of exhibition on the same footing as you do in England.

I exhibited some Strawberries and Auriculas in Dublin in April last; and on asking the Secretary of the Society for a pass, I was told that there was no pass given, and that I would not be allowed to enter till six o'clock, P.M., unless I had a subscriber's ticket. I, of course, thought it very strange that an exhibitor should not be allowed to see the results; but fortunately I had a friend who gave me a ticket, otherwise I might have staid outside till the company were dispersed.

I write this to let the Belfast and other gardeners see that theirs is not the only society in Ireland that allows such offensive treatment.—JAMES CLEWS, Gardener, Cloon Mohill, County Leitrim, Ireland.

[It is sooner the horticultural societies in Ireland expunge such a supercilious rule the more creditable will it be for them.—Eds.]

BIRMINGHAM ROSE SHOW.—The prize list of this important exhibition of cut Roses, garden ornaments, and horticultural implements is now ready, and, as will be seen on reference to the advertisement which appears in another column, may

be had on application to the Secretary, Mr. Alexander Forrest, Queen Chambers, Birmingham, from whom also forms of entry may be had. The last day on which entries of implements and garden ornaments can be made is July 2nd, and of Roses July 9. There is every reason to expect an unusually fine display of the "Queen of Flowers" at this interesting and important Exhibition.

DESTROYING WORMS IN POTS—HEATING FROM A KITCHEN FIRE.

I HAVE several times read in your Journal instructions for destroying worms, but do not remember whether they applied to pot-plants or not. Will you inform me whether any or what application can be made to Vines in pots without injuring the plants? I was repotting a young Vine this morning, and saw more worms amongst the soil than I liked to see. There were a lot of young white ones feeding, I suppose, on some broken bones that were put amongst the soil in the first shift from the small pot the eye was put in. These as well as the larger ones I want dislodged if it can be done without much risk, though so far as my observations go, I do not expect the worms will harm the plants much. They, I think, live on the fat of the soil, and not on the plants.

I beg to ask another question. My glass house or orchard-house is a lean-to, 24 feet by 12, south aspect, 5 feet 6 inches high in front, and 11 feet at back, all glass, ends and side, to 2 feet of the ground. In one corner at the east end, 8 feet by 4, I have erected a kind of stage, having three tiers or forms about 16 or 17 inches wide, and underneath this iron gas-pipes of two-inch bore run from the back of the kitchen fire along the west end of the stage, the front, and back; the pipe and water enter near the bottom of an iron cistern, close to where the pipe comes through the house wall. The same two-inch pipe forms the boiler, made to a bevel with the back of the fireplace, the bottom part connected with the cistern by a return-pipe of 1½-inch bore. I have no means of keeping the fire off the pipe boiler; so that as long as the kitchen fire is in, the water is hot, but never gets to the boiling-point, though it will simmer inside the cistern at the mouth of the flow-pipe, but never bubble. To counteract the heat I have to introduce the outside air, and everything put on to this stage, with regular syringing, grows famously. A young Vine, last winter little thicker than a stocking-needle, is now 6 feet high and three-eighths of an inch thick nearly.

The top form of this stage is about 6 feet from the apex of the roof, between which form and apex of the roof the wall is bare. Now, having given a description of the place, I wish you to tell me if a Muscat of Alexandria Grape will succeed in a wooden box 16 inches square; which, of course, holds more soil than a pot of that diameter, and if it will give an annual supply of fruit when placed on the top form or stage, and trained against the wall, allowing 7 feet for each branch, and a bunch at every foot of length—say about a dozen if needful.

The house designed as an orchard-house, has now nearly assumed the form of a greenhouse, but all wood and glass, has cost me about £20. The labour and work, except the heating apparatus, is all my own; and considering that I never handled a joiner's tool before, I do not think any amateur would despise it. This is information for a man of limited means as mine are. I have only night and morning to work.—W. M.

[Put a couple of spadefuls of quicklime into a barrel of water, stir it well, and when clear water the pots with it. This will destroy the worms, and do good rather than otherwise to the roots. We not agree with you as to the innocence of worms in pots. True, they do not often meddle with roots, but they disturb and unsettle the earth about them, and are apt to neutralise and stop up the best drainage. See what was said on drainage in "Doings of the Last Week," lately, as to keeping out worms. But in using bones and rich manure, the eggs of the worms are often taken into the pot in the compost, and lime water is the best remedy, and it will also act chemically with manure. It is not safe to use it strong for some fine hair-rooted plants, but Vines will not find fault with it.

Your mode of heating the cistern by pipes at the back of

the kitchen fire is ingenious, and, no doubt answers. Covering the cistern and giving plenty of air will neutralise the effect of the heat, and by shutting off that corner you might have a miniature hothouse there. If ever you find the heat too much, the simplest thing would be to shut off the pipes from the fire by a moveable iron back or damper, with an inch or so of air between it and the pipes. We can easily fancy that in hot weather you may have too much heat at that part, and if so a wooden covering would be best for the cistern. We would like the box for the Muscat Vine to be longer than 16 inches square, and so much deep. If 24 or 30 inches long by 16 wide and 16 deep, it would be better. If a heavy crop is taken from a 16-inch pot, it is rarely of much use afterwards, and eight to ten bunches from a Muscat Vine in a 16-inch pot would exhaust it too much for cropping it so every year. Much, however, may be done by removing the surface soil every year, top-dressing with rich compost, and using manure-waterings. You deserve great credit for doing the work so well, and we will be glad to hear how you succeed, and would merely hint, that if confined to 16-inch boxes, we would have several—say two or three instead of one. If the cistern did not occupy all the space, you might also plant a Muscat or two, train them up the back wall and down the roof. The roots would not dislike a little heat from the cistern.]

USE OF TAN AMONG STRAWBERRIES.

IN No. 115 a wish is expressed that tan may be tried for keeping Strawberries clean. I have a friend that has used it extensively for some two or three years to my knowledge, but I would not write till I had ascertained the result of his experience; yesterday he paid me an unexpected visit, and I at once made inquiries about it, and he says it is the best thing for the purpose he ever made use of. He has a Strawberry garden which produces when in full bearing about sixty quarts per day. The walks are only wide enough for convenience, and he every year covers the whole, walks and all, with tan fresh from the pit and has done this for some years. He puts it on in April, or sooner if doing so accords better with his other garden operations, and long before the fruit begins to ripen the tan is washed by the rains till it is as clean as the dessert plate the Strawberries are to be eaten off. It acts as a stimulant to the plants, saves all trouble of weeding, and the runners strike as freely into it as Ferns into cocoa-nut refuse; beside my friend can go about his garden in any weather without soiling his shoes, and I may add he is an experienced gardener, and not a young one.—**WORCESTER.**

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE annual dinner of this Institution took place on the evening of Friday last at the London Tavern, Bishopsgate Street, when upwards of one hundred members and their friends were present.

The chair was occupied by the Right Hon. the Earl of Ducie, supported by several members of the Council of the Royal Horticultural Society, among whom were Mr. John Clutton, Mr. J. J. Blandy, Rev. Joshua Dix, Mr. James Veitch, and Mr. John Lee. There were also present Mr. Robert Wrench (Treasurer to the Institution), Rev. J. M. Bellew, Mr. Koch, and Mr. Henry Paull, M.P., &c.

The room was profusely decorated with flowers and fine-foliaged plants. The whole end of the room behind the Chairman was a perfect bank, from floor to ceiling, of Geraniums and other showy plants liberally contributed, at no small trouble and expense, by Mr. Charles Turner, of the Royal Nursery, Slough. At the opposite end of the room, occupying a gallery in front of the Chairman, was a brilliant display of female beauty, even more attractive to the guests than the best exertions of Mr. Turner proved to be. Whether it is for the sake of uniformity that the ladies are placed apart opposite to the flowers, so that each may reflect a borrowed beauty on the ruder mass below, we know not; but we strongly suspect if they abandoned the higher regions and mingled among frail mortals, their presence would not be less effective nor their influence less beneficial.

The noble Chairman proposed the healths of Her Majesty and their Royal Highnesses the Prince and Princess of Wales, which were enthusiastically responded to.

In proposing the health of the Army, Navy, and Volunteers, his Lordship said, "As gardeners we should all hope for the time when swords shall be converted into pruning-hooks; but so long as the evil passions of men continued, that was an event which was not likely to happen as long as the world lasted. It behoved us, therefore, to look to our national defences, and to see that our military, naval, and volunteer services were preserved in a perfect state of efficiency." The toast was responded to in eloquent terms by Major Robinson, of the Hon. Artillery Company.

The Chairman then proposed the toast of the evening, "Prosperity to the Gardeners' Royal Benevolent Institution." His Lordship introduced the toast by remarking that it would be superfluous in him to say anything in favour of an Institution which had now been so long before the public, and which had been productive of so much good to a class of men to whom every member of the community was indebted. A vast number of the pleasures we enjoy are derived from the skill and labour of the gardener; and if evidence were wanting, we have only to look around us, even in the present room, and see the magnificent flowers and fruit with which the walls and tables are decorated. But it is not alone pleasure to the senses that we obtain from the gardener's art. It is well known that some of the most direful epidemics that devastated Europe, and particularly the northern parts, in the middle ages, have totally disappeared by the extended cultivation and use of garden vegetables. Gardeners as a class are intelligent and provident; but there are circumstances over which they have no control, by which they are not unfrequently reduced so as to be dependant on others for support. It was no disgrace for a man to be placed in these circumstances when he had striven hard to maintain a respectable position in society, and he would simply instance two men well known to the greater number of the company present—Mr. Mearns, gardener to the Duke of Portland, and Mr. Sangster, long a member of one of the large seed-houses in London. Both of these men had little expectation at one time that they would ever require to come to this charity for relief, but rather that in their later days they would not only be secure from penury, but were fairly entitled to enjoy some of the luxuries of life. It was for the relief of such cases that this Institution was founded, and he therefore had great pleasure in proposing "Success and Prosperity to the Gardeners' Benevolent Institution."

Rev. J. M. Bellew then proposed the health of the Chairman, remarking that one of the finest characters in the world was an English gentleman with a handsome income, who spent his life on his ancestral estates, diffusing joy and happiness to all around him. Such an English gentleman was the noble Chairman. Who was there connected with agriculture and gardening to whom the name of Earl Ducie was not familiar? But it was not in these pursuits alone that the noble Chairman had distinguished himself. In all the movements tending to benefit the country and society at large, his name and presence were to be found. Even in the volunteer cause he was eminently distinguished, and had taken so decided a part in rifle practice that he might be pronounced to be a *deuced* good shot. The toast was received with great applause, and his Lordship briefly returned thanks.

The Chairman then proposed the following toasts:—"Mr. Robert Wrench, the Treasurer of the Institution," "Mr. Cutler, Secretary." His Lordship retired at half-past 9, and the Chair was occupied by Mr. Bellew, who proposed "Success to the Royal Horticultural and Botanic Societies," which was responded to by Mr. Blandy.

Mr. Koch proposed the health of the Committee of Management, and Mr. Child returned thanks. The Chairman proposed the health of the Stewards and of the Ladies, which concluded the entertainment of the evening.

The sum of about £400 was subscribed in the room for the benefit of the Charity.

WORK FOR THE WEEK.

KITCHEN GARDEN.

PERSEVERE in the all-important operation of stirring the surface of the soil at every favourable opportunity. There is no kind of soil which will not be benefited by this operation; but certainly on those having a tendency to run together or bind, it is indispensably necessary. No one who has not followed out the system as the market-gardeners do, perseveringly, can truly estimate the great advantages resulting therefrom. It is very proper to apply stimulants in the shape of manure trenched into and incorporated with

the staple soil, or in a liquid state during the growing season; but the benefit of such applications is greatly increased by continual, and, as far as possible, deep surface-stirring; for it is the external atmospheric influences acting upon, and combining with, the substances composing the soil of plants, which reduces them to a state fit to be taken up through the roots, and assimilated by the plants. *Artichokes*, as the heads are cut, the stems to be cut close to the roots; clear the stools from decayed leaves, and loosen the surface of the soil about them with a hoe. *Asparagus*, the beds should now, in the midst of the growing season, and while the soil is moist, receive good soakings of manure water, with a good portion of salt added thereto, taking the precaution of applying in good time stakes and lines to the outside rows at least, to prevent heavy rains and high winds breaking down the plants, which is very injurious to the crowns. *Carrots*, if the aphides make their appearance on this or the Parsnip crop, dredge them well early in the morning with dry wood ashes, charred saw or wood dust, or soot, any of which is good, but the three mixed together have a most beneficial effect, not only in clearing away the nuisance, but also in fertilising the soil, and producing healthy luxuriant crops. If any of the Brassica family are attacked by insects, dredge them in a similar manner, and if attacked by the root maggot, apply soot in a liquid state. *Cauliflowers*, earth-up those that were planted in the beginning of last month; plant more for coming into use in the autumn. *Celery*, the main crops to be got out without delay, the plants to be well supplied with soft water, and to be shaded for a few days if necessary, the early crops to be liberally supplied with liquid manure, and the soil about them to be frequently stirred with a fork, but by no means make any attempt at moulding them up until they have attained the desired growth. *Garlic and Shallots*, as soon as the tops begin to die, take up the roots; after allowing them to remain on the ground a day or two to dry, tie them in bunches, and hang them in the root-cellar. *Onions*, make a small sowing for drawing young. The Tripoli answers well for that purpose; the autumn-sown ones transplanted in the spring are very fine this season, and will now be attaining their full size. When this is perceived lay the tops down for a time previous to pulling. *Sea-kale*, this, like the *Asparagus* crop, is particularly fond of manure water and salt, which may now be applied to assist in forming strong crowns to insure good cuttings of luxuriant, fine-flavoured Kale another year, the crowns to be duly thinned. *Spinach*, sow a few rows to keep up a succession; thin the preceding crop, and keep it watered in dry weather. *Tomatoes*, keep them well thinned-out and constantly nailed. *Turnips*, keep up good successional sowings, of which a good breadth may now be put in; charred refuse or dry wood ashes sprinkled over them when they are wet is a good preventive against the fly.

FLOWER GARDEN.

If the dry and hot weather continue, much watering will be necessary here. Even the ordinary herbaceous plants should have a thorough soaking once or twice a-week. Indeed, it is more necessary with these than with mass flowers, which have now, of course, become well established. Cut back the perpetual-blooming *Roses* as they go out of bloom, and well water with the richest manure water to encourage a second growth and bloom. See that *Hollyhocks*, *Dahlias*, and the taller-growing herbaceous plants are properly secured to stakes, &c., as they grow. The budding of *Roses* to be proceeded with in dull weather. Give plants infested with green fly a liberal washing with the engine, or syringe them with tobacco water. Now is the best season for observing the effect of the arrangement of the colours, &c.; and if any alteration is deemed necessary, it should be carefully noted, which will greatly facilitate its execution at the proper season. As yet, we cannot say that the flower garden at the Royal Horticultural Gardens is as perfect in all its parts as could be wished. There is an undue prominence of some particular colour—viz., scarlet and blue, while others of equal worth are "few and far between." But it matters not, though we have red, blue, and yellow colours in abundance; if there is an absence of compensatory hues, it would be like having the high notes in music without the low—no harmony nor variety would be apparent.

FRUIT GARDEN.

The principal operations here will consist in keeping the young wood of wall fruit trees constantly nailed-in, the laterals from the young wood of Peaches and Nectarines to be spurred down to the first joint. Some portion of the young wood of Gooseberries and Currants to be spurred-in at this season, as doing so both increases their productiveness and the fineness of the fruit.

STOVE.

Encourage the progress of the young stock for winter blossoming; and maintain a comparatively moist temperature. An increased circulation of air to be allowed amongst the *Orchids* during the bright weather that generally succeeds a period of gloom, as the humidity constantly stagnant will otherwise have an injurious effect.

PITS AND FRAMES.

These structures should now be producing for the conservatory or mixed greenhouse, a sufficient number of *Cockscombs*, *Balsams*, *Globe Amaranths*, *Thunbergias*, *Gloxinias*, *Achimenes*, &c. The growth of specimen *Fuchsias* should be duly encouraged, also late-blooming *Pelargoniums*. The *Japan Lilies*, *Chimney Campanulas*, and *Guernsey Lilies*, should be ordered in due time, they are remarkably pretty and useful autumn-flowering plants. See that *Cinerarias* and *Calceolarias* are standing in a cold, shady situation. A quantity of stocky plants of the *Scarlet* and *Variegated Geraniums*, *Veronica Andersoni*, *Heliotropes*, late-struck *Fuchsias*, &c., should be duly encouraged for late autumn-flowering. Encourage the growth of *Primula sinensis*, they thrive well in light, open, fibrous, sandy loam. The perpetual-flowering *Roses* should not be forgotten, they are good and useful plants in the gloomy months of autumn.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Sowed last Dwarf Kidney Beans in the open air, will sow more in a fortnight, where we can protect from autumn frost. Sowed *Dickson's Favourite*, *Bishop's Longpod*, and *Early Washington Peas* for the last crop unprotected. Staked-up advancing crops as we could get at them and could find sticks, of which we are scarce. In sowing at this season, we make the drill much wider and deeper than usual, sow the Peas wider, but not too thick; soak the drills after sowing, cover with an inch of soil, water more slightly again, and then place half an inch of dry soil on the surface, and strew with a little soot and lime. We also put lime in the water first used to start or kill slugs and worms. Drenched the rows of Peas bearing heavily, and those in full bloom, to help them to set strongly. To keep in the moisture, in some cases, where *Spinach* between the rows was getting old, cut it down, and placed it on at the bottom of the Peas; in other cases, brought short grass and litter, and where that could not be done, hoed the ground, so as to throw dry soil over the watered place to keep the water in by lessening evaporation. Sowed succession of *Turnips*, *Radishes*, *Lettuces*, and the first of *Endive*, watering and shading as soon as sown. *Fraser's Broad-leaved Endive* is a most desirable kind for winter work. Sowed also a little *Parsley* and *Chervil*, &c., for succession, and as we are scarce put in cuttings of *Tarragon* and other herbs. Topped late *Broad Beans*. A little *Mazagan* and *Longpod* may still be sown for late crops; but with us sowing after the middle of June seldom does much good. Regulated *Cucumbers*, turned out more *Gherkins*, and earthed the last piece of *Mushroom-bed* in the shed. Those in the house are almost done, and the first piece in the shed, from the rubbishy materials we could command, is coming in. In answer to several queries, we would say, that six weeks from the spawning is a good general time to wait. If forced into growth much earlier, they seldom bear so long. To all who wish to have the best material, however, we still say nothing exceeds in goodness droppings of horses fed on hard food, with about a third of the shortest litter, and the material not allowed to heat too violently before using it.

BIRDS.

A lady and gentleman who called here the other day, were in raptures of delight—and what with, think you? The

swarms of blackbirds, the clouds of thrushes, the numbers of dishwashers or water-wagtails, and starlings (the last two we have taken under our peculiar protection), the swarms of linnets hopping from bush to tree, and ever and anon emitting their sweet plaintive notes, and even the armies of the soot-balls of London—the thieving sparrows. What cared they if the finest Strawberries were nibbled, and the best Peas purloined? "Why we would have a garden for the very purpose, and let the sweet fellows take all they liked, if we could only get such hopping beauties, such choirs of harmony." It reminded us of a conversation between a lady and her gardener. Says Blue Apron, "I am sadly pestered with vermin, Madam; will you allow me to take means to lessen the evil by destroying the vermin?" "Certainly, why should you be thus annoyed? but what is or are the vermin?" "The birds, Madam, the birds; I must trap and shoot them." "O! the birds, the beautiful birds! call them vermin! The sweet, lovely songsters! No, indeed. You surely would not have the heart to kill them, and you, too, a man of such kind feelings! Why, my beautiful garden would be a lonely thing without my feathered friends." And Blue Apron was obliged to be content with grumbling. No doubt he netted and trapped on the sly; but a report of a gun was never heard. Nets must be our great safeguard in such circumstances, then there will be quite enough that will go to the birds' share, to repay them for what good these hard-billed gentry do us at other times, and we confess that to our own ears there is something sadly out of place in the noise of a gun, and the smell of gunpowder in a garden. It is amazing though, how the hard selfishness of our nature will often ride roughshod over all our best feelings and kindest sympathies. The last time we saw one of our friend bird-admirers, who looked upon us as worse than a Goth, for peppering some sparrows among a favourite quarter of Peas, he was making the whole neighbourhood ring with the rapid discharges of a huge horseman's pistol. "What, what, are you doing now? you shooting the pretty birds!" And he replied with crimsoned cheeks, "Bother them, they have cleared off my Strawberries, and now they will not leave a pod of this new delicious Pea." Aye, just so it is; let the shoe pinch in the tender selfish part, and then, notwithstanding our admiration of our feathered friends, there are times when we would wish they gave us less of their attentions, or that means should be used by which we might reckon on having the first gatherings, so as to leave them only bountiful gleanings. Let birds alone, "first served" will ever be their motto.

FRUIT GARDEN.

Tied-up Raspberries that had drooped and broken ties with the weight of fruit. Some grumbled at the frost injuring the Gooseberries just when out of bloom, and many, no doubt, were cut off; but if with us 50 per cent. more had gone, it had been a good thing for the bushes, as they are far too heavily loaded, notwithstanding the quantity taken for bottling. Even now it would be a charity to thin them if we could find the time. One advantage is, there will be little necessity for summer pinching of the young wood, though both Gooseberries and Currants, at all strong, are much more fruitful and easily regulated in consequence. Some of the bushes are rather thin of leaves, which we attribute more to a thunderstorm than to caterpillars, as after early spring we have seen little of the latter. Netted almost every piece of ripening Strawberries, and find that the individual fruit, thanks to the rains coming in time, are coming better in size than we expected at first. Some of the later Keens' and the earliest Queens have been very good; still the bulk, owing to the dry weather, are rather smaller than usual. At one time it was all the fashion to have Strawberry-banks, the beds divided by stones, flints, bricks, &c., and the Strawberries hanging temptingly over them. The first necessity for their full success we should consider to be abundance of water near to them. One error, however, it is as well to dissipate, and that is the idea that beds so raised require such an amount of water in addition to those planted on the level quarter. Young plants generally need more at first; but when plants are established and the surface is either kept stirred or mulched, the plants on such banks need no more watering than those on the level. In fact, they are just as independent as the depth of good

earth beneath them is all the more, for the roots will go deeper and the moisture will rise by capillary attraction so long as there is moisture to get. We have known such banks spoiled by merely keeping the surface moist, which kept the roots starved from two causes—the water at the surface did not get down to them, and the line of evaporation being broken there was no rising of moisture from beneath to help them.

Netted all Cherries from which we expected to gather, otherwise we should expect to reap nothing but the stones and the stalks. Kept shortening the points and thinning the shoots of Pears, Apples, Plums, &c. Find our double smoking has pretty well done for the brown beetle among the trees in orchard-house, Peach-house, &c., but it has been a worry. Have heard wondrous tales about a new insect powder, and a sort of piston pepper-box for ejecting it on insects wherever settled or situated. The thing is, those missed are just the mischief and need the looking after. We dislike smoking for many reasons; but still for many purposes it is still the most effectual plan. Painted the backs of frames and pits where Melons are growing, to keep the red spider, &c., at a distance. Watered Peach trees, Fig trees, and Vine-border outside after strewing over it a little soot and superphosphate of lime. Used water about 100° as it would get cooled in touching the earth, and proceeded with thinning Grapes as fast as we could, as they now require being attended to. Young potted Pines should be slightly shaded and syringed in very bright days, and shut up early in the afternoon should have a little air at night if the heat inside will permit. From 60° at night, to 85° and 90° during the day, with air and atmospheric moisture in proportion, will suit them better than a high-steaming temperature at night, which renders them too languid to stand a great amount of sun heat without flinching. Bottom heat now should be from 85° to 90°. Removed Cherry trees finished bearing and with buds well formed to an earth-pit, partly plunged the pots, and gave in addition to necessary waterings, good syringings all over with clear soot water, and at times a little sulphur water to keep off red spider or other insects. Those who wish fine-flavoured Oranges of their own growth, should keep their plants under glass and give them plenty of sun temperature. Guavas, where grown should also have plenty of sun and air as the fruit ripens, or it will be insipid. Other matters much in routine.

ORNAMENTAL DEPARTMENT.

Mowing Machines.—Out of doors the chief work has been mowing and machining the lawn and grass between flower-beds. In grass of usual strength the machine ought to be used every four days or so in common weather. There is little economy in using it so as to be forced to go over the ground twice. Some gentlemen have complained to us, that though they can manage with Budding's, Shanks', Wilkinson's, Green's, &c., when the grass is short and dry, and the ground firm and hard, they can do no good with their machines when the ground is at all mossy, as the knives get clogged up at once and refuse to cut except in seams, that not only tear the muscles of the man's arms, but leave the work in ridges and furrows and as ugly as a bad-cropped head of hair. To remedy the latter evil the roller or rollers in front should be sunk considerably, which just elevates the knives all that the more, and enables them to cut the grass without plunging down into the moss. In fact, all such matters must be regulated by the roller in front. In going among small beds and going round circular beds, it is of importance that the roller in front, as in Green's 16-inch machines, should be divided into four equal parts, as then you can go round a circular or a curved line as easily as a straight one. With the roller in one piece you cannot do so, but must take several shorter strokes to get round the circle or curved line. As to cutting grass when wet, though it can be done, we rarely attempt it, but find that the drier and shorter the grass the better the work will be done. For want of regulating by the roller many a machine is left to enjoy itself alone in the tool repository and the old scythe depended on. We were lately consulted as to why a machine would not work. Its roller has been removed as an improvement, and to cut with such a machine at all must have required a very great amount of physical exertion merely to

keep the machine properly balanced. There are nuts in all machines by which the front roller can be elevated for firm ground and short grass, and depressed for longer grass or loose mossy ground, and the knowledge of this simple fact would cause many a machine to be employed that now is useless and unused. We are glad to say that we have had no difficulty with grass-cutters, the men preferring them much to the scythe. We have no doubt that a little patience and gentle encouragement must be given to secure their being used in some places where everything now is objected to. A little of Sam Slick's soft sawder will, judiciously employed, soon be found to conquer all the objections of prejudice.

In the flower garden we presume most of Tulips and spring bulbs have now been taken up, unless it is resolved to leave them out all the season. Gladiolus will stand waterings with manure-water, or may get a rich top-dressing of old rotten dung or leaf mould. Dahlias have been looked over as to tying and watering; ditto as to Phloxes and herbaceous plants in general. Set out a number of *Hollyhocks* in pots that had been struck from the thinnings of good kinds some six weeks ago, and which were inserted under hand-lights over a very slight hotbed. There are now some hundreds of fine plants, which will bloom this autumn. We may take off a lot more when thinning and tying; but these will not do so well, as the young shoots slipped off early when too thick. We have, it is true, struck them from buds even of the thinnings; but all such buds and all such shoots rooted now will require to wait next year for blooming, whilst slips taken off in spring will come nearly as soon into bloom as cuttings struck last autumn. Now is also a good time for sowing *Hollyhocks* to bloom next season, pricking them out on a border when up, and planting out in autumn and spring where wanted to bloom. Now is also a good time for striking under a hand-light, or a shady border, *Pentstemons*, *Phloxes*, perennial *Silenes*, *Heartsease*, and *Pinks*. In order not to disfigure the old plants of the latter, it is best not to cut over the cutting, but to pull it at once out of its socket, and thus the cutting is fit for insertion at once. This is done by holding the bottom of the shoot by the left hand, and pulling the top with the right hand, just at the second joint; most of the pieces, cuttings or pipings, will come out clean from the joint, and with a sounder bottom than you could make with the sharpest knife. This method is not only the best, but saves a deal of time in stripping leaves and base cutting across.

Roses have been mulched, as we could not water them, and some of the stronger shoots have been stopped and nipped. The first massive show of fine sorts against a wall is nearly over. Rose cuttings will do now, but better a month or six weeks hence. Many of the *Antirrhinums* (*Snapdragons*) are very beautiful, and now is a good time to increase the best kinds by cuttings. It may be as well to wait a few days longer if the cuttings are not quite ready. The best cuttings are those that come from the stem below the flower-spikes. When these are about 3 inches long slip them off close to the stem, and insert in sandy soil under a bell-glass in a shady border. If the shoots are thinned many of the side shoots left will bloom later, though the spikes will not be so fine at the first. These *Snapdragons* make beautiful masses in rough or rock gardens; but some people dislike the smell of them very much, whilst other people rather like it. Edged and hoed beds of bedding plants, and have had no end of labour in securing them. They are now filling fast. When the ground is a little warmer we will slightly mulch them in the openings with old Mushroom-dung, &c. Changed plants in conservatory, and gave plenty of water to *Camellias* in conservatory and in hothouses, as if left dry now they are apt to drop the buds that are formed. Syringed *Azaleas* frequently. Potted young *Geraniums*, and many other hardwooded and softwooded plants, &c.—R. F.

ELM LEAVES VARIEGATED.—Who can account for the leaves of Elm trees becoming variegated throughout the whole tree, so as to present an appearance of almost perfect whiteness? The trees in question have assumed this aspect within the last few years, and stand amongst others which remain in their natural state.—W. H. BRADON, *Devonshire*.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

CALCEOLARIAS (*H. J. H.*).—The blooms were much withered and much bruised. They seem to have been handsome but small. Saving seed from the best would probably give you some good varieties.

SUNDIAL (*An Old Subscriber*).—Such a manufacture is quite out of our province. Consult some Encyclopædia.

TWELVE CAMELLIAS (*J. R. W.*).—So far as we know them, those in your list are all good. For twelve we would select from it—Augusta, Alexina, Chandlerii, Caryophylloides, Hendersonii, Jubilee, Mathotiana, Pennsylvanica, Perfection, Rubini, Verschaffeltiana, and Viscomite nova.

TIME FOR CUTTING-DOWN GERANIUMS (*A Subscriber*).—It is best to have successions of *Geraniums*. We have cut them down at times varying between July and the end of September, and found they succeeded equally well; but, of course, those cut late were later next year than those cut early, and had small foliage until the spring.

MILDEW ON CUCUMBERS (*N.*).—It is just possible that the slate in both cases gets too hot, but the chief cause of the mildew may be owing to deficient ventilation. We would use sulphur freely over the slate, and give air night and day. We should not like the roots getting through the slate. We would make it secure-jointed, place 6 inches of rubble over it, and have holes at the sides to make sure that the water poured through the pipes never stood higher than 1½ inch over the slate. In the other bed we would do the same; but as the sides seem comparatively open, to secure top heat we presume, you could not expect the same bottom heat there. With such an open chamber, the case of "Lanks versus Pipes" has not a fair chance. To insure a fair comparison both chambers should be equally shortened, and moisture presented equally to both slate coverings. Merely dry heat will not rise so quickly and regularly by itself as when it is accompanied with hot vapour.

HEATING A CONSERVATORY (*H. Gibbons*).—Your sketch gives no information about the levels. If the boiler in the aviary is a foot or 18 inches below the base of the garden and the drawing-room doors there will be no difficulty whatever. You could not well make a junction from the pipes in the aviary, unless the pipes were as high in the house to be heated. You might do this by bringing the pipes as far as the doorway, and causing them to return from thence without passing the doorway. In fact, you might have all the heat you want from a stack or pillar of pipes without the pipes going round the house at all. A small brick Arnott's stove would no doubt do the work well, but then you would require a chimney. Most likely the hot water would be the best and least troublesome. If you gave us a section of aviary, boiler, and house to be heated, showing the level of boiler, doorways, &c., we would be more sure.

VARIOUS (*Extra Miles*).—The best time for moving Briar Roses for budding is any time from the fading of the leaves until they begin to grow in the spring, the sooner in the winter the better. Take the Briars up carefully, prune the roots to 6 or 8 inches from the stem, prune off all shoots from the stem, and leave it at the desired height, plant in good rich soil so as to encourage fibres near home, and as soon as growth appears, prune all off along the stem except one or more shoots at top, and bud these close to the stem as soon as the bark runs and you can get buds well developed. See Mushroom culture in a late Number. Six weeks is a general time after spawning and earthing-up; but we have gathered in less than three weeks, and had them as long as ten or twelve weeks. In ordinary circumstances, six weeks is what we calculate on, and it is very rarely we have been disappointed for thirty years. We think that such things as *Maurandias* and *Lophospermums* in small pots will suit you, and so would such *Nasturtiums* as *Tropæolum tricolor* and *pentaphyllum*.

IPOMÆA HEDERIFOLIA CULTURE (*Felixstowe*).—We suspect your plant is the *Quamosit hederifolia* of Paxton, a rather tender annual from Brazil, which will blow in a warm sheltered place in the open border, if turned out about the beginning of June. If these conditions cannot be given, it will flower well on a rough branch if kept under glass. There is even still much confusion with some of these plants. For instance: A small, scarlet, very beautiful convolvulaceous plant is sometimes called *Ipomœa coccinea*, *Ipomœa quamosit*, and *Quamosit coccinea*. This, too, like *hederifolia*, raised on a hotbed, hardened and turned out in June, will do well in a warm place, but north of London in most seasons it will do best under glass.

CALCEOLARIA VIOLACEA (*G. K.*).—We are not quite sure of the variety you mean. If it has pinnate leaves and small lilac-violet flowers, it would flower best in spring and early summer in the greenhouse, and would do best if kept in pots. If put out of doors it will do best plunged in a pot. If planted out and then lifted, the wood is apt to be too rampant to bloom freely. If it is the sort we imagine it will not blow freely out of doors, unless in a warm sheltered place, and even then it would be better if kept in a pot plunged.

WEIGHTS USED FOR FRUIT (*Subscriber*).—The pound of sixteen ounces is the weight employed at our London exhibitions and at Covent Garden in weighing fruit.

WORK ON GARDENING (*An Amateur*).—You can have "The Garden Manual" free by post from our office for twenty postage stamps. It will give the information you mention.

FLORIST'S FLOWERS (*Chas. Oldham, Wrexham*).—We do not think that the flowers sent are superior to many in cultivation. It would be well if all raisers of seedlings had a few of the best of those cultivated to compare with their own productions.

SEEDLING PANSY (*T. C. H., Little Wymondley, Stevenage*).—The Pansy is certainly very black, but so are several of those now in growth; and in shape it was little better than the wild one. It might answer for bedding purposes if free-flowering enough.

SEEDLING PELARGONIUM (*Christine*).—The seedling Pelargonium is not, we should consider—unless it has some very peculiar properties in freedom of bloom, &c.—worth cultivating.

SEEDLING CALCEOLARIAS (*H. Major, Knosthorpe*).—The seedling Calceolarias are very fine; the size of the flowers and the brilliancy of the markings being alike conspicuous. We wonder much why the flower is not more cultivated. It deserves to be generally grown.

STRAWBERRIES.—We have received from B. Webb, Esq., Calcot, near Reading, a basket of immensely large Strawberries which Mr. Webb calls "Refresher." It is somewhat like Sir Harry or some member of that race. The flavour was excellent, and one in the basket measures 9 inches in circumference!

BROAD BEANS FAILING (—).—The fleshy knobs or excrescences on the roots of the Beans are quite natural, and have nothing to do with your crop failing. You will find similar excrescences on the roots of greater part of the tribe of the pod-bearers which are cultivated for food—viz., Peas, Beans, Lentils, &c. We could not detect any fungus nor anything the matter with the root. We can, therefore, only guess at the cause of your crop failing. Perhaps your land is light, and the crop failed in the dry weather for want of moisture. The plants may have been infested with the bean aphid, or the flowers poor with abortive pollen.

GRAPES DISEASED (*T. F. C.*).—The enclosed berries were badly spotted. The pavilion on the eastern side of the vinery would materially aid in bringing about the diseased condition of the berries. The Canon Hall is more liable to the spot than most others. It requires a dry hot atmosphere to have it in perfection. The shading from the pavilion would prevent the sap taken up by the roots from becoming thoroughly elaborated in the leaves, and in that crude state it entered the berries no doubt. We know of no remedy but keeping the berries dry during the ripening process, and keeping the roots, not too highly fed, near the surface, with the full solar rays over them continually without shade.

NAME OF FRUIT (*Thomas Record*).—Your Grape is Chasselas de Failoux, described in Hogg's "Fruit Manual."

NAMES OF PLANTS (*Harrie*).—*Eccallonia macrantha*. (*P. H. G.*).—4, *Campanula garganica*. The other three too shrivelled. Flowers for recognition must be sent in a fresh state, or we cannot afford the time required to name them. (*Acoca*).—1, *Pernettya mucronata*; 2, *Fabiana imbricata*; 3, *Helianthemum tomentosum*; 6, probably *Philadelphus mexicanus*. The others were too shrivelled for identification. (*W. E. Heris*).—1, *Cynoglossum sylvaticum*; 2, *Hypericum androsaemum*; 3, *Lysimachia nemorum*. (*Celandine*).—It is *Salsify*, *Tragopogon porrifolius*. These must be some mistake. (*T. S.*).—1, *Thalictrum flavum*; 2, *Medicago lupulina*; 3, insufficient; 4, *Ballota nigra*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY SHOWS.

JULY 20th to 24th. WORCESTERSHIRE. Sec., Mr. J. Holland, Chesnut Walk, Worcester. Entries close June 20th.
JULY 30th and 31st. EASTERN COUNTIES (Stowmarket). Secs., Messrs. W. G. Ranson, and A. Simpson, Stowmarket. Entries close July 21st.
AUGUST 25th. DORSETSHIRE. Sec., Mr. T. Grant. Entries close Aug. 17.
AUGUST 29th. HALIFAX AND CALDER VALE. Sec., Mr. W. Irvine, Halifax.
SEPTEMBER 2nd. COTTINGHAM. Sec., Mr. J. Brittain.
SEPTEMBER 2nd. WAKEFIELD AND WEST RIDING. Sec., Mr. J. Crossland, Jun., Wakefield. Entries close August 24th.

CHINESE PHEASANTS.

IN "La Maison de Campagne," a French periodical, is a notice of Pheasants, and among them a description of the Chinese, which we have thought worthy of being translated. We are more especially moved to do so because we have frequently said, we believe, that Pheasants may be profitably kept as a hobby.

"This bird has not been long known in France, and yet it has been so extensively crossed with the common that it is difficult to procure pure birds. The cock should have a sharp head; long thin neck, divided in the middle by a large white ring; neck violet shaded; the lower part of the back and the wings clear green (query, light blue?), the sides yellow; but every feather forming the side-coverts should be marked at its extremity with a regular black point. The tail is short, pointed, brown, and transversely striped. The female is smaller and thinner in shape than the male, her plumage is of an ashen grey with violet shades.

"The Indian is at once distinguished from the common Pheasant by his smaller head, and the manner in which he carries it thrown backward, and by the almost perpendicular carriage of the tail when the bird is walking. The half-bred Indian is a large bird, and recognised by the green on its neck which has a red tint, by its wings which are grey instead of green, and above all, by its sides which are

irregularly spotted on a yellow ground with red shades, as in the common Pheasant. It is also less wild than the pure bird, in which wildness seems a characteristic of the breed. The Indian begins laying from the 10th to the 30th of April and finishes in June; lays from thirty to forty eggs, colour dark olive, nearly round, and much smaller than those of the common birds. The hens lay many more the second than the first year. The breeding-birds should be fresh-mated every five years. A pen 9 feet square will serve for a cock and five hens.

"The Indian poulters may be distinguished from the first by two very dark black stripes they have on each side of the forehead. The black stripes they have on the body are also much plainer than in the common poult.

"In taking account of the qualities and defects of the Indian, it is hard to decide whether it is superior to the common breed. It is certainly handsomer, it lays more freely, the young hatch better and come out stronger, but it is subject to the same weakness. It is besides extremely wild, and often kills itself against the top of its pen or cage, unless this covering be common network, or the birds have one wing cut. When turned into the woods there is no hope of ever catching it again, its suspicious character drives it from the trap, although suffering, it may be, from hunger. It flies much better than the common bird, but it takes advantage of this to change from one place to another, if disturbed often. We believe it can only be kept on large domains."

SHEFFIELD POULTRY AND PIGEON EXHIBITION.

THE Poultry Exhibitions hitherto held at Sheffield have always been carried out under the pressure of many difficulties: hence arose the numerous changes of management, and also the impression became general that such meetings would be no longer carried out, on account of the impossibility of finding a gentleman willing to take the responsibility incurred. At length, however, success seems to have followed closely on the energetic means this year adopted to secure this Show's annual perpetuity. By far the best of all the Sheffield shows of poultry has been the result, and the Exhibition of Pigeons has certainly never been equalled out of the metropolis. We are glad to add that the weather being also favourable, a very highly respectable and numerous company were drawn together on this occasion. As might be anticipated, the pens of Messrs. Turner, of Sheffield, than which none are more effective, were those used by the present Society. It is scarcely necessary to say, the Cremorne Gardens at Sheffield afford every possible convenience for such a meeting, whilst the rural and extensive views in all directions are not trifling adjuncts in calling together a numerous assemblage of visitors, from among those more particularly whose daily avocations confine them within the precincts of densely-populated neighbourhoods. It is only just to add, the birds were well fed and attended. We will briefly remark on the principal classes.

The old birds of *Dorkings* were not shown in large numbers, nor was their condition that of birds just now fattened for an exhibition, the early moult of the present season precluding it altogether. Still, there were among them many pens that in a few weeks might be shown very advantageously. The *Dorking Chickens*, on the contrary, were really first-rate.

Old *Spanish* necessarily showed to the worst possible advantage, for the reason just assigned in the adult *Dorking* class; *Spanish*, perhaps, being the most affected during moult of any poultry. The first prize went to Mr. Garlick's celebrated pen; but the second and third were withheld. In this variety the *Chickens* were not numerous, but exceedingly good. The class for *Spanish Hens* was a perfect one, and one of the most closely-competed in the Show.

The *Cinnamon* and *Buff Cochins* also showed to very great advantage, whilst in the *Brown* and *Partridge-coloured* class the contest, though confined to two pens only, was unusually good. Certainly Captain Heaton, though successful, has never before been pressed so closely. The only representative of *White Cochins* was Mr. Dawson, but they fully maintained the credit of that gentleman's yard.

The *Brahmas* were better than at any previous Sheffield Show.

All the Game classes were well filled, the birds being excellent, and high condition was almost the universal order of the day. Mr. Charles Challoner showed birds that would indeed be hard to beat in any show, the condition, plumage, and the character of the birds, being alike faultless. Mr. Helliwell's Duckwing cock was also a very worthy competitor in the *Single Game Cock* class, nor were his pen of three in the same variety less praiseworthy.

The *Malays* at Sheffield were such as no previous meeting in this neighbourhood ever possessed; the birds of Mr. Ballance, of Taunton, being the successful ones.

The *Hamburgh* classes, though so good, showed as all such varieties of fowls at this season must do, the disadvantages of moulting time; nevertheless, the competition was a remarkably close one. The rivalry in these classes during the coming winter season of 1883 will most probably be beyond precedent.

Never were *Polands* so scantily shown. Of Black White-crested, although two classes were specially appointed them, not one pen was even entered.

The *Sebright Bantam* classes were equally void; but the *Game* and *White Bantams* were really above par.

Mrs. Seamons, of Aylesbury, took all the prizes for *Aylesbury Ducks*, with such birds as that lady alone can exhibit, and it is as worthy of remark the Embden *Geese* from the same breeder were equally unexceptionable. Mr. Fowler's *Bouen Ducks* were really excellent. Three pens of extraordinarily good *Buenos Ayrean Ducks* were shown, but all in immature feather.

In *Pigeons*, the Sheffield Show this year must rank among the highest; and when we inform our readers that the renowned stock of Mr. Peter Eden were shown in full force, regret must prevail among those Pigeon-fanciers who did not avail themselves of a sight of the Sheffield collection. That gentleman's triumph was necessarily complete, being first in both the *Carrier* classes, first and second in both the *Pouter* classes, with such *White* ones as make all who see them covet; first in *Almond*, and also other *Tumblers*; first and second in *Barbs*, besides other minor premiums. The class for "New, or any distinct variety" of *Pigeons*, was a perfect treat to any lover of those birds; in fact, we never before saw four pens of *Bunts* together so good as were here shown, and we must not omit very favourable mention of both the *Archangels* and *Icelanders*.

The *Rabbit* pens were well filled with capital animals, but a keen wind prevailing, they seemed as though inclined to whisper "no place like home;" the open exhibition ground being a most extreme change from their customary hutches.

DORKING (Silver-Grey).—Prize, J. K. Fowler, Aylesbury.

DORKING (Coloured, except Silver-Grey).—Prize, Rev. J. F. Newton, Kirby-in-Cleveland, Stokesley.

DORKING (Any colour).—*Chickens*.—First, Rev. J. F. Newton, Kirby-in-Cleveland, Stokesley. Second, F. Key, Sheffield. Third, Rev. J. G. A. Baker, Biggleswade, Beds. Commended, Rev. J. F. Newton. *Cock*.—First, H. W. B. Berwick, Helmsley, Yorks. Second, J. White, Warlaby, Westhallerton. Third, T. Tatham, Kingshorpe. Highly Commended, Rev. J. G. A. Baker. *Hens or Pullets*.—First and Third, H. W. B. Berwick, Second and Highly Commended, Rev. J. G. A. Baker.

FRANCON.—First, J. Garlick, Liverpool. Second and Third withheld. *Chickens*.—First, J. R. Rodbard, Wrington, Bristol. Second, J. K. Fowler, Aylesbury. Highly Commended, T. Greenwood, Dewsbury. *Cock*.—First, H. Beldon, Bradford. Second, J. R. Rodbard. Third, J. Smith. Highly Commended, E. Brown, Sheffield. *Hens or Pullets*.—First, J. R. Rodbard, Second, H. Beldon. Third, Master H. Clabe, Aston. Highly Commended, S. Robson, Brotherton; Mrs. Brown, Sheffield.

COCHIN-CHINA (Cinnamon and Buff).—Prize, T. Stretch, Ormalkirk. *Chickens*.—First and Third, J. H. Barker, Sheffield. Second, F. W. Earle, Edenhurst, Precoat.

COCHIN-CHINA (Brown and Partridge).—Prize, Captain Heaton, Manchester. Highly Commended, R. White, Sheffield. *Chickens*.—Prize, J. Stephens, Walsall.

COCHIN-CHINA (White or Black).—Prize, W. Dawson, Hopton Mirfield (White). *Chickens*.—Prize, W. Dawson (White).

COCHIN-CHINA.—*Cock*.—First, T. Stretch, Ormalkirk. Second, J. Wright, Woodridge. Third, S. White, Tidswell. Fourth, H. W. B. Berwick, Helmsley. Commended, R. White, Sheffield. *Hens or Pullets*.—Prize, H. W. B. Berwick.

BAHMA-POOHA (Light or Dark).—First, J. Hinton, Hinton, Bath. Second, Mrs. M. Seamons, Aylesbury. *Chickens*.—First, J. K. Fowler, Aylesbury. Second, J. Hinton. Third, Mrs. M. Seamons. *Cock*.—First, J. Hinton. Second, J. K. Fowler. Highly Commended, J. Parcs, Chertsey.

GAME (White and Piles).—First, A. Guy, Eaton. Commended, G. Helliwell, Sheffield. *Chickens*.—Prize, A. Guy.

GAME (Black-breasted and other Reds).—First C. Challoner, Steeley. Highly Commended, G. Helliwell, Sheffield. *Chickens*.—First, C. Challoner. Second and Third, H. Snowden, Great Horton. Commended, C. W. Laxton, Skelton; W. Bentley, Scholes; W. H. Wordsworth, Chesterfield.

GAME (Black and Brassy-winged, except Greys).—First, G. Helliwell, Sheffield. Second, W. W. Ballard, Leamington.

GAME (Duckwings and other Greys and Blues).—First, G. Helliwell, Sheffield. Third, S. Slater, North Carlton. Second withheld.

GAME (Any colour).—*Cock*.—First, C. Challoner, Steeley. Second, G. Helliwell, Sheffield. Third, G. Wostenholme, Sheffield. Fourth, J. Wharrie, jun., Rotherham. Highly Commended, T. Bramhill, Sheffield; G. Wostenholme. Commended, E. Aykroyd, Bradford; J. A. B. Greaves, Ecclefield. *Hens or Pullets*.—Prize, W. Bentley, Scholes.

MALAY.—First and Second, Master C. A. Ballance, Taunton. Highly Commended, A. Sykes, Mile End, London. *Cock*.—Prize, Master C. A. Ballance.

HAMBURGH (Golden-pencilled).—First, W. Froggatt, Walkley, Sheffield. Second, S. Smith, Northowram, Halifax. Third, J. Pritchatt, Edgbaston. *Chickens*.—First, H. Pickles, jun., Early, Skipton. Highly Commended, S. Smith. *Cock*.—First, H. Beldon, Bradford. Second, W. Bolton, Sheffield. Third, G. Hancock, Sheffield. Commended, T. Crookes, Sheffield.

HAMBURGH (Golden-spangled).—First, G. Brooke, jun., Huddersfield. Second, H. W. B. Berwick, Helmsley. Third, J. Roe, Haddfield. *Chickens*.—First, Mrs. A. Roe, Haddfield. Highly Commended, G. Brook, Huddersfield. *Cock*.—Prize, H. Beldon, Bradford.

HAMBURGH (Silver-pencilled).—First, Miss F. Harrop, Walkley, Sheffield. Second, C. Moore, Poulton-la-Fylde. Third, H. Beldon, Bradford. *Chickens*.—Prize, Mrs. J. Harrop, Walkley, Sheffield. Highly Commended, A. Nicholson, Walkley, Sheffield. *Cock*.—Prize, H. Beldon.

HAMBURGH (Silver-spangled).—First, H. Beldon, Bradford. Second, T. Davies, Newport. Highly Commended, A. Newton, Sladen, Leeds. *Chickens*.—First, W. Bowne, Sheffield. Second, H. Bancroft, Stannington. Third, T. H. Turner, Sheffield. *Cock*.—Prize, H. Beldon.

HAMBURGH (Golden or Silver-pencilled).—*Hens or Pullets*.—Prize, G. Helliwell, Walkley, Sheffield. Highly Commended, J. E. Powers, Biggleswade, Beds.

HAMBURGH (Golden or Silver-spangled).—*Hens or Pullets*.—Prize, Mrs. Birch, Sheffield.

POLANDS (Golden).—Prize, H. Beldon, Bradford.

POLANDS (Silver).—Prize, W. Newsome, Bingley, Yorks.

POLANDS (Golden or Silver).—*Chickens*.—Prize, J. Hinton, Hinton, Bath. *Cock*.—First, F. Hardy, Bradford. Second, H. Beldon, Bradford. Commended, F. Hardy.

GAME BANTAMS (Black and other Reds).—Prize, Hon. W. T. Fitzwilliam, Rotherham. Commended, W. Illingworth, Sturton, Retford.

GAME BANTAMS (Other varieties).—Prize, W. Silvester, Sheffield.

GAME BANTAMS.—*Cock*.—First, Miss Brown, Sheffield. Second, G. Helliwell, Walkley, Sheffield. Third, W. Wood, Sheffield. Commended, W. L. Mason, Chesterfield; A. Sykes, Mile End, London.

BANTAMS (Black or White).—First, J. Wade, Leeds. Second, Miss K. Charlton, Bradford.

BANTAMS (except Game).—Prize, J. Wade, Leeds.

DUCKS (White Aylesbury).—First, Second, and Commended, Mrs. M. Seamons, Aylesbury.

DUCKS (Bouen).—Prize, H. Beldon, Bradford. Commended, J. K. Fowler, Aylesbury.

DUCKS (Black East Indian).—First and Second, C. A. Ballance, Taunton. Highly Commended, J. B. Jessop, Hull.

GESE.—Prize, Mrs. M. Seamons.

PIGEONS.

CARRIERS.—*Cocks*.—First and Third, P. Eden, Salford. Second, J. Smith, Sheffield. Highly Commended, S. Robson, Brotherton. *Hens*.—First, P. Eden. Second, H. W. Edmonds, Westminster, London. Third, H. Beldon, Bradford. Highly Commended, W. H. Edmonds. Commended, P. Eden.

POWTERS.—*Cock*.—First and Second, P. Eden, Salford. Third, H. Beldon, Bradford. Highly Commended, W. Taylor, Sheffield; H. Brown, Walkley, Sheffield. Commended, M. E. Jobling, Newcastle-on-Tyne. *Hens*.—First and Second, P. Eden. Third, W. Taylor. Commended, G. Ure, Dundee.

TUMBLERS (Almond).—First, P. Eden, Salford. Second, F. E. Elze, Bayswater, London. Third, H. Beldon, Bradford. Highly Commended, W. H. Edmonds, Westminster, London.

TUMBLERS (Any other variety).—First, P. Eden, Salford. Second, H. Beldon, Bradford. Commended, F. E. Elze, Bayswater, London.

FANTAILS.—First, Miss Brown, Sheffield. Second, F. Key, Beverley.

JACOUBINS.—First, H. Yardley, Birmingham. Highly Commended, F. Key, Beverley.

TRUMPETERS.—First, S. Robson, Brotherton. Second, H. Yardley, Birmingham.

BARBS.—First and Second, P. Eden, Salford. Third, H. Yardley, Birmingham. Highly Commended, Mrs. Taylor, Sheffield.

TURBITS.—First, J. R. Jessop, Hull. Second, H. Beldon, Bradford. Commended, J. Wade, Leeds.

OWLS.—First, F. E. Elze, Bayswater, London. Second, H. Beldon, Bradford. Third, M. E. Jobling, Newcastle-on-Tyne. Commended, H. Beldon.

BEARDS.—Prize, F. E. Elze, Bayswater, London.

ANY NEW OR DISTINCT VARIETY.—First, T. D. Green, Saffron Walden. Second, H. Yardley, Birmingham. Third, J. Smith, Sheffield. Highly Commended, T. D. Green; J. Wade, Leeds.

RABBITS.—*For Length of Ears*.—Prize, W. White, Sheffield. *For Colour*.—First, W. J. Pope, Biggleswade, Beds. Second, W. Chamberlain, Desford, Leicester. Third, R. W. Freestone, Rotherham. Highly Commended, W. Hudson; W. Littlewood, Chesterfield. *For Weight*.—First, J. Warner, Chesterfield. Second, F. Jones, Sheffield. Highly Commended, W. L. Mason, Chesterfield.

Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, officiated as the Judge both of the Poultry and Pigeons.

EASTERN COUNTIES POULTRY SHOW.—We are informed that great exertions are making to render this a first-class Exhibition, and we hope that it will be successful. The plan adopted at this Show and elsewhere, of giving prizes pro-

portionate to the number of entries we think very good. Thus, if there are only five entries in a class, the first prize will be only £1, but if there are twenty entries that prize will be £3, the second and third prizes being increased at a similar rate.

CRYSTAL PALACE SUMMER POULTRY SHOW.—A report has been circulated that this Show is to be discontinued. Our readers will be pleased to hear that the Directors of the Crystal Palace have the subject under consideration, and it is most probable that next week we shall be able to announce the days on which the Show will be held.

DRONE-BREEDING QUEENS.

In reference to the hive mentioned at page 406, in which drones appeared on the 24th of April, I may add that it had not been fed either last autumn or this spring: therefore, might not be supposed to be in a more advanced state than other vigorous hives at the same season. As your correspondent "B. & W." had strong stocks in his apiary, it cannot but be supposed that there were drones in some of them earlier than he had observed, especially in such a mild climate as Somersetshire; for even so far north as Northumberland drones were down early in May. The hive A, with a pure Ligurian queen, he reports as very populous and active, and no doubt its drones were early; so that even if the queen of B should prove all that could be desired in point of the purity of her progeny, "B. & W." can scarcely have a plea in favour of drone-breeders in spring: rather, I imagine, the verdict of English bee-keepers will accord with that of their German brethren, recorded at page 285 of last volume, however painful its execution may be to the tender-hearted apiarian. As "A DEVONSHIRE BEE-KEEPER" proposed, at page 270 of last volume, to try the same experiment with the family of a drone-breeding queen, and your readers have not been favoured with an account of its success in impregnating young queens before the natural time for the appearance of the drones, I infer that it has also failed. In short, it appears as necessary that there should be a high temperature, as that there should be drones in existence.

Can "B. & W." say what had been the maximum temperature about the end of May? as it would be interesting to ascertain the lowest temperature in the shade at which fecundation has been known to take place.

The importance of having a prolific queen at the head of a family in autumn cannot be overrated; but perhaps this did not occur to "A. W. B." who writes under the head of "Swarming Difficulties," at page 425 of last volume, as it appears two families were united to his weak stock, while no mention is made of the removal of the queen. It is a good rule never to retain the queen of a hive which is weak in numbers in autumn; but in forming unions to select that queen which has the largest population. I do not go so far as to say that weakness is invariably to be laid to the charge of the queen, as it is possible other contingencies may have been the cause; still, if there are two or three queens to select from, the extra trouble of driving and removing that which may be under suspicion would be more than repaid by the future prosperity of the hive.—**INVESTIGATOR.**

[Premising that I have already fully indorsed the conclusion of German apiarians as to the general uselessness of drone-breeding queens, I have pleasure in stating the result of my own experiment. My virgin queen is still living and still lays the eggs of drones only, but her fecundity is not nearly so great as I anticipated, whilst providing her with workers to perform the ordinary duties of the hive is no small tax on the resources of my apiary. On one occasion only can I imagine that she, or rather one of her drones, has done good service, and that is in the impregnation of a young queen hatched on the 14th of May, which commenced egg-laying on the 30th of the same month. In this case I had no drones but these of her breeding, with the exception of a very few in one of my other stocks, and these latter were destroyed during the wet weather we had in June. Whilst agreeing with "INVESTIGATOR," that a tolerably high tem-

perature is necessary in order to render the services of drones available, and that, therefore, it would probably be of little use to attempt queen-rearing much before the natural time—in reliance upon the progeny of a drone-breeder, I may yet point out that drones produced in this abnormal manner are by no means so liable as others to be destroyed on the occurrence of bad weather, and that this in bad seasons is no small advantage where the presence of drones is really of importance.—**A DEVONSHIRE BEE-KEEPER.**]

QUEENS CHANGING COLOUR.

THE heading of one of your last communications from apiarian friends—viz., "The Variation in Colour of the Honey Bee," tempts me to announce "a sport" which has taken place in one of my hives.

I have been a bee-keeper since 1848—have kept them in three counties—have been a close observer of their habits; and although I have generally gained a wrinkle every year of my bee-keeping existence, I never observed any variety in the colour or appearance of the queens till this year in the hive above alluded to, after its swarming for the third time. There is in it a queen striped round her body as if with yellow bands. I have had little or no experience with Ligurians. I am not aware that there is a Ligurian stock within miles of my present abode. It is possible, but not probable, there may be three or four miles off. I took, however, my hive last autumn to some heather near to Aldershot; there my old queen might have got a cross. Will one of our entertainers and instructors in bee-keeping be kind enough to vouchsafe an attempt at a solution of this difficulty respecting the colour of a queen? I can satisfy a bee-friend that I have heard piping in three instances where I am certain no swarm could have escaped without my knowledge. In those instances I imagine the old queen, instead of leading-off the dance, touched a bucket with her toe.—**A HAMPSHIRE BEE-KEEPER.**

[We have no doubt that the old queen met a Ligurian drone somewhere, and that the yellow-banded queen is the progeny resulting.]

OUR LETTER BOX.

DORRING FOWLS (L. F. R.).—White feathers are quite unimportant, but they are not desirable. A bent comb is a great disadvantage to a cock, and would tell against him in competition. Dark spots on the breasts and backs of hens are not in any way a defect. We have seen them in many of the best birds we ever had to do with. There is no better or harder breed than the hens that have brown plumage, with dark spots and lighter breast.

COCHIN-CHINA FOWLS (Subscriber).—The best plates of poultry that have been published are those in the "Poultry-Book," edited by the Rev. W. W. Wingfield and G. W. Johnson, Esq. In some breeds, as in Spanish, the comb, even at six weeks old, is sufficiently developed to mark the sex; but in others, as in Cochins, it is much longer before it is developed. In Cochins you will find the head of the cocks much coarser than the pullets, and the tail-feathers curled and light like those of the Ostrich. It is impossible to fix an exact time for pullets to lay, but well-fed May chickens ought certainly to lay in November. We have known them to do so in October. Your last question is the most difficult. You should be satisfied if you hatch half. We do not consider ordinary travelling very injurious to eggs for sitting.

THE WOODBURY STRAW HIVE.—In the reply to "A. B. C." which appeared last week you state that the Woodbury straw hive "is usually fitted with a wooden cover." This is quite correct if it refers to the outer case which protects the hive, but may mislead many if it is taken to refer to what in wooden hives is termed the "crown-board." This latter is in point of fact made of straw worked in a square wooden frame.—**A DEVONSHIRE BEE-KEEPER.**

CELANDINE FOR THE TOOTH-ACHE (Celandine).—We are not aware of this, *Chelidonium majus*, being recently used for removing teeth, but Parkinson, two centuries ago published as follows:—"The juice or decoction of the herb gargled between the teeth that ache, taketh away the pain, and the powder of the dried root laid upon an aching, hollow, loose tooth will, as they say, cause it quickly to fall out."

LONDON MARKETS.—JULY 6.

POULTRY.

As the supply increases the price diminishes, and the season of the year pointing to a declining trade is not without its influence.

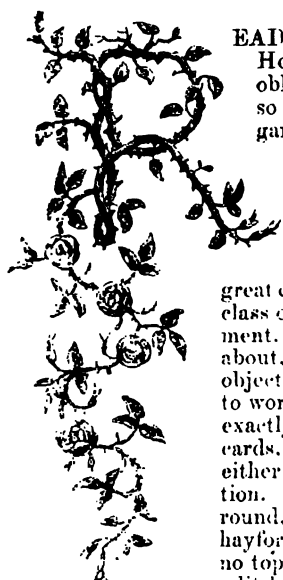
	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	0	3	6	Guinea Fowl	0	0	0	0
Smaller do.	2	6	3	0	Leverets	0	0	0	0
Chickens	1	9	2	0	Rabbits	1	3	1	0
Geese	4	6	5	0	Wild do.	0	8	0	0
Ducklings	2	6	3	0	Pigeons	0	7	0	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JULY 14—20, 1883.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
14	Tu	Houston died, 1783. Bot.	76.2	51.7	63.9	14	iv.	10 af 8	47 af 2	59 af 6	28	5 29	185
15	W	Tonch-me-not flowers.	76.0	50.4	63.2	19	2 4	9 8	45 2	31 7	●	5 36	186
16	Th	J. M. Fleischmann died. Gard.	76.2	50.4	63.3	14	3 4	8 8	47 4	0 8	1	5 42	187
17	F	Goosefoot flowers.	76.0	52.1	64.0	12	4 4	7 8	51 5	23 8	2	5 48	188
18	S	Orache flowers.	74.7	51.2	62.9	18	5 4	6 8	57 6	42 8	3	5 53	189
19	Sun	7 SUNDAY AFTER TRINITY.	72.8	51.2	62.0	21	6 4	5 8	5 6	2 9	4	5 57	200
20	M	Hensfoot flowers.	72.5	51.2	61.8	22	8 4	4 8	8 9	20 9	5	6 1	201

From observations taken near London during the last thirty-six years, the average day temperature of the week is 74.9°, and its night temperature 51.2°. The greatest heat was 93½°, on the 14th, 1847; and the lowest cold, 39°, on the 18th, 1851. The greatest fall of rain was 1.60 inch.

THE SPADE.



READERS OF THE JOURNAL OF HORTICULTURE must be much obliged to the correspondent who so ably described the market-gardening of West Cornwall; and amongst other notices mentions the ground as being dug over and the Potatoes taken up with the Cornish spade or shovel.

I believe there would be great difficulty in inducing any other class of workmen to use this implement. One we have at Linton lies about, and is regarded more as an object of curiosity than an article to work with. In shape the plate is exactly like the spade on playing-cards, and on that account may either claim antiquity or distinction. The handle is either a plain, round, straight one, like that of a hayfork, or with a slight curve, but no top cross-handle. There is also a little bend at the neck. In this respect these spades differ from the

navvy spade of the same form. In digging it is easy to perceive they are better adapted for entering the ground than for lifting any great quantity of mould from it; and it is easy to understand that much less power is required to force them into the ground than the ordinary square-mouthed spade, but in the latter the hand assists more in that duty. The unevenly-broken bottom of the cultivated surface may, however, be better suited to vegetation when the work is done with the Cornish spade than when it is performed with the ordinary one, as we have every reason for believing that digging is better than ploughing from the same cause; still we cannot admit the implement to have any claims to general adoption, and doubt not but time will see its final abandonment.

Taking a wide stride—or shall we say voyage?—up the channel to the other extremity of our triangular-shaped country, we shall land in Kent, and there we find that no county certainly presents a greater extent of surface under hand-cultivation; and it is not too much to say that, taking a circuit of several miles from where I write, the extent of ground under the plough is not double of that under the spade. This is a large proportion, but in some parishes the quantity under hand-culture is double that under plough; and it might be thought that where so large an area is operated upon, those engaged in the work would for their own interest have long ago found out the best implement for the purpose; yet I expect the tiller of the soil in other counties would shrink from the use of the Kentish spud, as it is locally named, as

much as from the Cornish spade or shovel. Still we have no right to condemn the practice of others until we have duly inquired into all its bearings, and very often we shall find our hasty condemnation was without a cause.

The Kentish spud is certainly not a tool commending itself to the amateur. It is in many instances of great weight, the handle-socket reaching almost up to the top; and the prongs, three in number, are flat at their points, and gradually become square as they unite with the cross-piece. The neck is much bent, so as to point the prongs very much forward when the implement stands upright. The advantage of this is to enable the digger to get over a larger space of ground by digging shallow; and as prongs are less hurtful amongst roots than a square-edged spade, the implement is of course adapted to the Hop-gardens and fruit-orchards, which constitute so large a part of the ground cultivated in this way. Most ordinary digging of plain ground is also done with the same implement; and whether such be clayey or stony the strong tines of the spud find their way downwards better than the spade would do. In very light ground the spade may be used; but it is far from being in much repute, excepting in such gardening operations as cannot well be accomplished with the spud.

I believe, but am not certain, that the Potato-fork, as it is called, had its origin in Ireland; but whether so or not, it is certainly to a stranger an implement easier to manage than the Kentish spud. In it three rather broad prongs, much shorter and more straight, are set into a head or handle of much the same description as the other, but it is altogether so much lighter that it is much easier to wield. Its use is widely diffused, and some of the stiff lands of Hertfordshire and adjoining counties are much easier turned over with it than with the spade. There are also many modifications of it, and of course various sizes. One, a sort of hybrid between a fork and the spade, has the tips of all its tines united to a plate having an edge like a spade. The advantage of this is strength, and in ground that sticks tenaciously to the tool there is less space for it to do so, and it delivers its load more readily. It, however, requires the same amount of force to induce it to enter the ground as the spade, and, not possessing some of the advantages of that tool, is not much used; but the ordinary three-tined digging-fork is in general repute in most of the midland counties, and is unquestionably a useful article.

The more-recently-introduced steel digging-forks, by some of the best implement-makers, are unquestionably making their way, from being adopted by spirited individuals in various districts. They are generally four-tined, and when made of good steel and not too slight they work very freely, clearing themselves well. Some of them, however, appear to be too weak for the stiff heavy lands, or to do such stubborn work as trenching and the like, but no doubt a stouter article can be had; while to the amateur, who likes a tool that will enter the ground easily, is light to handle, and to which the wettest soil finds but little space to cling, the steel

digging-spud is unquestionably the best tool he can have; and since most ironmongers keep them, it is easy to obtain them anywhere.

Some other forms of the articles above named might be mentioned, but I do not consider it necessary. We will, therefore, at once proceed to the implement which gives a name to all the usual modes of hand-tillage—the Spade; and though great diversity once did exist in this useful tool, there is certainly less variety now than of yore. A knowledge of the correct modes by which power can be applied to the best advantage has led to the abandonment of unsuitable articles; while the greater attention paid to the manufacture has caused considerable improvement, not so much in the shape as in the quality of the implement. It may be had of all sizes that may be wanted. Some little peculiarities to suit the customs of certain districts exist; but in general these are not important, and the names of some of the best makers may be favourites in districts hundreds of miles apart.

In the northern counties the spade is in more general repute than any of the species of fork with which we are acquainted, yet it is difficult to account for this. There is plenty of stiff land there, but custom has established the spade, and time alone will assert the claims of the fork if it be superior. For many purposes, however, the spade is indispensable. In digging up turfy land, casting out furrows, or draining, the fork is powerless; but for draining or excavating operations there are other tools than the spade. One locally called the graft—in some respects like a spade, but the two sides curved in spout fashion—is a very handy tool for excavating in stiff ground, the load it lifts not being so likely to drop on its way to the cart or elsewhere as from the ordinary spade; but as the present article was to be confined to tools adapted for tillage purposes only, such tools need not be adverted to, as the graft is certainly inferior to the spade for that purpose.

As to the best makers of spades there are many different opinions. Lyndon's are in most repute here. In these the blade or edge seems to be of good steel, the handle-socket long, and there are side-straps to prevent it wearing at the neck (many other makes also have this), and the top cross-handle has a rivet through it to prevent its breaking as many do that are subjected to severe work. Working men, however, have all their especial favourites, and doubtless they are the best judges, especially after they have had trial of others. Certainly no article deserves greater attention on the part of the maker than the spade; and although price very often indicates quality, I by no means wish it to be inferred that a low-priced one is cheap. On the contrary, a well-made spade is easier to work with than an inferior one, and often lasts double the time, independent of the greater pleasure and comfort there is in using it. We find, however, that, useful as the spade may be—and there seems no reason to doubt of its continuing so with all the appliances of machinery and other inventions—there is nevertheless a limit to its use as well as that of all other things. Other tools require attention also; and leaving the further prosecution of hand-tillage to other parties, a few notes on various implements in general use may be given in future articles.

J. ROBSON.

PEAS, AND HOW TO GROW THEM.

(Concluded from page 467.)

2ND. IN MODERATE-SIZED GARDENS.—In some places there is the convenience of a south wall. Under it, on the southern side, you can have Lettuces planted to come in after the Endive is done, and a row of Peas about 4 feet from the wall in a parallel line to it, without injuring the Apricot and Peach trees on the wall. Peas in this position should be sown on November the 10th, and from this parallel line let fall in December some perpendicular drills 3 feet apart, and sow in them Sangster's No. 1. Dillistone's Early Polific being sown in the parallel. A few spruce branches will save these from the nipping east winds if stuck on one side of them. In open weather another sowing may be made in February, and on the 1st of March a sowing of Warwick Early Frame, or whatever else the seedsmen please to call it, and Early Green Marrow. Whenever the first crop of

Marrows is sown it must be done at the same time that the last crop of earlies is sown. This is to provide for a succession. For successional crops the annexed table may be referred to.

After the first sowings are accommodated with warm sunny sites the main crops will do better in the open quarters.

Of late, planting Peas amongst other crops has been advocated. I am persuaded this is erroneous. I cannot tell what space is saved, nor see any better crops accrue, nor yet any crop that likes smothering between Pea-rows. I object to making Beet, Potatoes, and other root crops subservient to Peas. Suppose we sow Peas in rows 12 feet instead of 6 feet apart, and take a crop of Beet between, the Peas will take up 3 feet of the space, and of the remaining 9 feet fully 6 feet will not have any sun until ten o'clock, and none after three o'clock, so that there are but 3 feet left fully exposed to the sun's rays, and instead of its being a saving it is a loss of 6 feet. The Peas will be better for this extra space I admit—they will bear better if gales keep away; but when they are growing at wide distances they are more liable to be broken in a gale, and the few extra Peas gained do not compensate for the waste of ground. A gardener with a row of Peas here and another there will find himself in the same predicament as he that fills his garden with fruit trees and expects to grow vegetables under them. The height which any variety of Pea attains is ample distance between the rows of that variety, and the shade they afford to Celery during the hot dry months of July and August is beneficial rather than detrimental. Shade retains moisture in the soil, and that is a point worth courting in Celery-culture, especially where there are not those who can be always running about with the watering-pot.

Sandy or light soils do not afford good Peas in dry weather, and the Peas grown there are more liable to mildew, and are not half so sweet as those grown on richer soil—in fact, they are more like the bullet-like Peas bought in the market than fresh-gathered home-grown Peas. To obviate this sow on a manured trench similar to Celery, and give a drenching—dribblings are injurious—of weak liquid manure once or twice a-week, according to the weather. If it be warmed to 80° or 90° it will be the better; but if taken out of the tank where it has been diluted with spring water at a temperature of 50° it will check rather than forward the crop.

A row of Peas 20 yards long will afford from six to twelve pecks of Peas, and successional rows of that length sown every ten days will insure a supply for a family from June to November.

3RD. IN LARGE GARDENS.—South walls are here with frames, and glass houses without number. A row of Tom Thumb, Beck's Gem, or any other name you please (we want a sweeping-out of names, and a shorter nomenclature), sown along a south wall, and about a foot from it, about the 15th of October, will outstrip those sown anywhere else; and if a few spruce branches are stuck in front of them in severe weather, and the wall protected by nets, Peas may be had in May. The late Mr. Smithers, gardener to the late Sir Wm. Milner, Bart. and his father, for fifty-four years, of Nun Appleton, Tadcaster, informed me that he once gathered the Early May on the 13th of May, and in looking over his note-book I found a confirmation of the fact. To this old gardener I am indebted for much information; and his observations, extending as they did over half a century, gave one an insight into gardening matters from 1797 with certainty. I only regret not making more copious extracts.

I shall not say more about Peas in large gardens except a few notes on growing them in frames, houses, and pots.

Peas, where there is every modern appliance, can be had pretty nearly all the year. Tom Thumb is the best for pots, Eclipse and Sangster's No. 1 for frames and sowing in houses. The Pea is impatient of fire heat. A temperature of 40° at the beginning is hot enough, and a mean of 45° should not be exceeded until the Peas are in flower, when the temperature may be increased to 50°. They require abundance of light—cannot, in fact, have too much—and a current of air blowing on them continually.

To have Peas on New Year's-day a pit with a hot-water pipe or two is almost necessary, though they can be had in pots. When grouse arrive for table (12th of August), it is high time to sow a couple of rows of Peas in a six-foot pit:

Sangster's No. 1 at the back and Eclipse in front, 3 feet from the glass, in a soil rather poor, and a foot deep. Expose, taking off the lights, to the full sun and air, watering if necessary, and not putting on the lights until heavy rains and strong frosts render them necessary; but always take them off again when the weather is dry and mild. If all be well, little fire will be required, but if the Peas are not in bloom in the latter part of October fire heat must be applied, allowing a current of air to blow through the Peas day and night; even during fog, frost, and snow, air must be given. If the autumn be hot they may need retarding: a shading with mats after flowering will keep them back, and liberal supplies of water will keep them cool, and help to fill the pods. This crop will, if all go on right, afford a dish on Christmas-day, New Year's-day, and now and then throughout January. The pit should be 30 feet long to do this.

In another pit Peas should be sown on the 1st of September, this time using Tom Thumb, and they will afford a few Peas at the beginning of March, but not if the lights are half wood, and the other half opaque through age. Tom Thumb may be sown again on the 1st of October, November, and December in pits as before, after which Sangster's and Eclipse will do better, and two sowings of these are enough, on the 1st of January and 1st of February. The latter sowing will give Peas in May, and those on the south-wall border will follow them.

The late Peas being liable to be cut off by early frosts, and being difficult to cover up, a sowing of the early kinds made under the shelter of a wall in July where they can readily be covered up, or in frames, will pretty nearly enable the gardener to have Peas all the year round; but they are had at such a cost and in so small a quantity that few can indulge in them. Luxuries, however, are not measured by cost.

Pots 9 inches in diameter are best for Peas. Good drainage and rich porous soil are requisite. Fill the pots three-parts full with soil, and place the Peas all over the surface an inch apart. Cover thinly with light soil, half an inch deep or so; watering when necessary, and when the plants are 3 or 4 inches high earth them a little, and place some fir twigs round the sides of the pots. In all stages they must have abundance of air and light. If confined they become drawn, and attacked by green fly; if hot and dry, thrips and red spider will soon end them; and if kept in a cold, moist, confined atmosphere, mildew will paralyse them. Thirty pots sown on the 1st of September will give a dish of Peas on New Year's-day, if the pots are placed by a south wall, and not housed until the weather render it imperative necessary.

A few sown about the 1st of August, kept out of doors until frost comes, and then moved to an orchard-house, will afford Peas in November. Sowings can be made in October, November, December, January, and February, and those being in pots can readily be moved about from one house to another as their wants may render desirable. A row sown in an orchard-house will give Peas in the beginning of May if sown in October, and protected with a little dry coarse hay strewn over them in severe weather.

The months in which Peas are obtained with most difficulty are February, March, and April. To have them in the other months is merely a question of time, labour, expense, and appliance or convenience. One point more and I have done. In cold soils, and bleak and wet situations, it is a mere waste of seed sowing Peas in November. It is better to sow on reversed turfs 6 inches wide—3 inches will do—making a hollow in the centre lengthwise, and then sowing the Peas in the hollow, and covering with soil. A sowing made in this manner in February, brought forward in a vinery until the plants are a couple of inches high, and then removed to an orchard-house, pit, or frame, where they can remain until the beginning of April, when they will be hardened so as to bear planting out, will succeed better than rows that have stood the winter. I do not know who was the first to introduce the system, but be he who he may he certainly deserves honourable mention.

Sowing Peas in pots to plant out is a good practice—in fact, a few hundreds of pots sown in February under glass, and the plants gradually hardened-off, often afford more Peas, continuing longer in bearing, and giving larger pods than Peas autumn-sown.

The following list includes the best varieties, and the length of time each variety takes to mature, all the varieties being sown at one period—the 20th of March. The dates refer to the time most conducive to their well-doing, or necessary to secure a supply.

Name and Description.	Time of sowing.	Weeks required to mature.	Height in feet.
SECTION I.—EARLIEST VARIETIES.			
TOM THUMB (Beck's Gem, or Royal Dwarf).—Very early, dwarf, useful for pots, growing in frames, and in warm situations.	Nov. 10th under a wall. January ...	11	1 to 1½
DILLISTONE'S EARLY PACIFIC .—Blooms in a mass, pods small, all the crop gathered at once. The earliest Pea in cultivation.	Nov. 10th ...	11	2
SANGSTER'S No. 1 (Sutton's Early, Conqueror, Champion, & Daniel O'Rourke).—The best of the earliest.	Nov. 10th. Feb. and Mar. 10th ...	12	3 to 4
EARLY FRAME (Double-blossomed Frame, Charlton, Hotspur, Warwick).—Good cropper; stands severe weather well.	Nov. 10th. March 1st ...	13	5
SECTION II.—SECOND EARLY. <i>Coming into use in June and July.</i>			
DICKSON'S FAVORITE (Auvergne, Sickle).—Extra long pods, containing nine to ten Peas. Fine flavour.	March 1st, 10th, 21st, & April 1st ...	14	4 to 5
BISHOP'S DWARF .—Large pods; good cropper and quality.	March 1st to April 15th.	15	3
PARADISE MARROW (Champion of Paris, Excelsior).—Good cropper and excellent flavour.	March and April ...	14	5
CLIMAX (Napoleon).—Blue wrinkled Marrow; requires rich soil.	Mar. 15th to April 15th ...	13	3
BURBRIDGE'S ECLIPSE (Stubb's Blue Marrow).—Rich-flavoured large Pea; long pods, dwarf, robust-growing.	March and April. June 15th ...	14	3
BELLAMY'S EARLY GREEN MARROW (Prize-taker).—Great bearer, pods good size, Peas dark green. Keeps long in season.	March and April ...	14	4
FLACK'S IMPERIAL VICTORY .—Branching, fine flavour, and good cropper.	April and May ...	14 to 15	3 to 4
CHAMPION OF ENGLAND .—Most delicious; good bearer.	April and May ...	14	5
SECTION III.—GENERAL CROP.			
BLUE PRUSSIAN (Prolific).—Round, prolific; excellent flavour.	April and May ...	15	3 to 4
SCIMITAR (similar to Bedman's Imperial and Flack's Victory).—Round blue pods, long and curved.	April and May ...	15 to 16	3 to 4
FAIRBARD'S BLUE SURPRISE .—Long well-filled pods, containing seven to nine Peas; good quality.	April ...	14 to 15	4
FAIRBARD'S NONPAREIL .—White, wrinkled; good bearer.	April and May ...	14 to 15	4
LORD HAGLAN .—Worthy of the veteran Marshal. Green-wrinkled, fine flavour; keeps long in season.	April and May ...	17	5 to 6
THURSTONE'S RELIANCE (Dancer's Monastery).—Large and good.	April and May ...	16	6
VEITCH'S PERFECTION .—Delicious flavour, robust branching habit, fine foliage, large well-filled pods. A better Pea cannot be.	April 1st to May 30th ...	16	3
WOODFORD GREEN MARROW (Nonsuch).—Rich flavour and productive; liable to mildew.	April and May ...	15	3 to 4
SECTION IV.—LATE CROP.			
BRITISH QUEEN (Defiance, Carter's Victory, Tall Mammoth).—Fine flavour, very large Peas and pods; bears till killed by frost.	April 15th to May 31st ...	17	6 to 8
NK PLCS ULTRA (Jeyes' and Payne's Conqueror, Incomparable).—Deep green, great bearer, very superior flavour; best for late crop. Will not bear cold and wet.	May 1st to June 1st ...	17	6 to 8
GENERAL WYNDHAM .—First-class; glossy, dark green pods.	April 15th to June ...	17	6 to 7
VICTORIA MARROW (Waterloo, Gibb's Defiance).—Fine flavour, large pods, abundant bearer.	April 1st to May 30th ...	16	6 to 7
MAMMOTH DWARF GREEN MARROW .—Strong, dwarf habit, branching from near the ground; fine flavour.	May ...	16	2½ to 3
MAMMOTH TALL GREEN MARROW (Monarch, Strathmore Hero).—Fine flavour, very prolific; large size.	April 15th to May 30th ...	16 to 17	6 to 7
MAMMOTH TALL WHITE MARROW (Champion of Scotland).—Spendid Pea; fine cropper.	June 1st ...	16 to 17	6 to 8
WHITE SCIMITAR (Sugar Pea).—Eatable pods; the best of Haricots.	April and May ...	15	3 to 4

Palates vary more than the quality of Peas. The best way to test Peas is to sow a small quantity of each, and so suit the appetite, and learn the kinds best adapted to the

soil and climate. It will prove an interesting experiment, and the notes accruing therefrom would be extremely useful.—G. A.

THE NATIONAL ROSE SHOW.

SECOND NOTICE.

So far as the two Metropolitan Rose Shows are concerned this year, my own judgment upon them was that while Roses were not out of character, they were certainly not in character. They were not, as two years ago, so badly bloomed that it was difficult to tell the varieties; neither, on the other hand, were they so fine as I have seen them, or perhaps as they will be at the Birmingham Show next week. As I said in the last *JOURNAL OF HORTICULTURE*, they had a "used-up" look about them; this referring to their general appearance, some blooms, however, being very fine.

Amateurs were certainly first, their flowers exhibited in some of their boxes being very fine; and, as in the account I gave of the Crystal Palace Show, I rather inclined to the nurserymen, I must now speak more of the amateurs; and here, as usual, Mr. Hedge, of Reed Hall, Colchester, carried the greatest weight of honours. Three first prizes and a second clearly testified to the immense difficulty of attempting to vanquish so experienced and so large a grower as he is. It is astonishing, and would be to those who are non-exhibitors, I have no doubt, almost incredible, how many trees must be gone over before a good box of blooms can be cut. I was talking at the Exhibition to one of the largest growers in the kingdom, who was describing to me a magnificent quarter of Roses containing about 15,000 plants, budded with only one bud, and yet he said if he had had to cut ninety-six blooms he would have been greatly puzzled to have done it. Mr. Hedge grows about 2500 plants, and must do them well and creditably to be able to cut so many blooms so constantly as he does during the Rose season.

In the class for forty-eight Roses, single trusses. Mr. Hedge had Comtesse de Chabillant, Madame Furtado, Madame Vidot, Charles Lawson, Adam, Gloire de Santenay, Mathurin Regnier, François Lacharme, Rubens (Tea, a most lovely bloom), Lord Raglan, Dr. Deultin, Madame de Cambacères, Souvenir d'Elise (Tea, exquisite), Jules Margottin, L'Enfant Trouvé, very fine—how any one can say this is the same as Elise Sauvage puzzles me; Madame Zoutman, La Ville de St. Denis, Madame Domage, Acidalie, Baronne Prevost, Souvenir d'un Ami (Tea), Letitia, Prince Léon, Triomphe de Rennes, John Hopper (exquisite), Leo X., La Fontaine, Madame Sertot (Tea, good), Queen Victoria, Général Jacqueminot, Enfant de Lyon, Sénateur Vaisse, Colonel de Rougemont, Souvenir de Loveson Gower, Gloire de Dijon, Boule de Nanteuil, Auguste Mié, Madame Masson, Mrs. Rivers, and Anna de Diesbach. Miss Crawshaw, Reading, was second. The most remarkable flowers in her stand were Madame Falcot (one of the highest-coloured yellow Tea Roses we have), Sénateur Vaisse, Gloire de Santenay, Amiral Gravina, Baron Gonella, Devoniensis (very fine), and Madame Vidot. Mr. Worthington was third. In his stand was a splendid bloom of Isabella Gray (which, alas! too rarely displays her beauties), Devoniensis, Homer (a curiously mottled Tea), and Prince Camille de Rohan. In Mr. Ingle's stand, who came fourth, there was a beautiful bloom of the old yellow Provence, beautiful, indeed, but another of those which so rarely expand.

In the class for twenty-four blooms, Mr. Dobree, of the Priory, Wellington, Somerset, was first with Louis XIV., Comtesse de Chabillant, Jules Margottin, Queen Victoria, Gloire de Santenay, Moiret, François Lacharme, Louise Peyronney, Madame Masson, Madame Rivers, Madame Charles Crapelet, Gloire de Dijon, Lord Raglan, Madame Furtado, Charles Lefebvre, Caroline de Sansal, Madame Charles Wood, Souvenir de la Malmaison, Victor Verdier, Prince Camille de Rohan, La Reine, Sénateur Vaisse, and Louise de Savoie. Mr. Hedge was second, and in his stand were fine blooms of Mrs. Rivers, Comtesse de Chabillant, L'Enfant Trouvé, Charles Lawson, Gloire de Dijon, and Gloire de Santenay.

In the class for eighteens, Mr. Hedge was first with Madame Furtado, Madame Vidot, Lord Raglan, William

dame Boll, Gloire de Dijon, François Lacharme, Juno, dame Domage, Auguste Mié, Charles Lawson, Na Prince Regent, Comtesse de Chabillant, Monte C and Caroline de Sansal. Mr. Ingle was second, and amongst others, good blooms of Devoniensis, Elise Sauvage, Pauline Lanzezeur, William Griffith, and Charles Lef

In the class for twelves, Mr. Hedge was again first Charles Lawson, Madame Vidot, Gloire de Dijon, La de St. Denis, Souvenir d'un Ami, Madame Boll, Carol Sansal, Madame Pierson, Mrs. Rivers, La Fontaine, and Lord Raglan. Rev. H. Helyar, of Yeovil, was with Sénateur Vaisse, Général Jacqueminot, Madame tado, Victor Trouillard, Comtesse de Chabillant, M Hector Jacquin, Jules Margottin, Gloire de Dijon, E Appert, Comte de Nanteuil, Triomphe de Paris, and C Lawson.

To enumerate the names of the winning flowers in stand seems a repetition, tiresome, and endless. We know what Roses to expect. Of course, Général Jacqueminot, Comtesse de Chabillant, Sénateur Vaisse, Gloire de Dijon, and other Roses of a similar well-known character will be there, and, therefore, as I am now to notice nurserymen's prizes I will only take such flowers as remarkable in each class. A flower may be in one excellent, in another worthless.

In Mr. Cant's stand of ninety-six, which obtained the prize, were John Hopper, Celine Forestier, Comtesse Kergorlay, Souvenir d'un Ami, Cloth of Gold, Christianer, Alexandre Fontaine, Sénateur Vaisse, Olivier Delhomme, Madame C. Wood, Louis XIV., Eugène Appert, Sou de Comte Cavour, Souvenir d'Elise (a most exquisite bloom), Duc de Rohan, and Devoniensis. In Messrs. Paul & stand, which obtained the second prize, were Louis J John Hopper, very fine; Madame C. Wood; Baron Roth (1862); François Premier; Jean Goujon (1862); M Bernhardt; Aurora, good Tea; Lord Canning, fine dame Julie Daran; Monte Christo; Vicomte Vigier Rhone (1862); Transon Goubault; Anna Alexieff; Sen Vaisse; Prince Camille de Rohan, fine. In Mr. Mit third were Louise de Savoie, Sénateur Vaisse, Charles Lefebvre, Professor Koch, Joséphine Malton, Souvenir de Eardley, Christian Püttner, Souvenir de Comte de Gloire de Dijon, Turenne, Général Jacqueminot, Duc suna, and Madame Charles Crapelet.

In the class of forty-eights, three trusses of each Charles Turner, of Slough, was first with, amongst others, Madame Charles Crapelet, Celine Forestier, Souvenir de Comte Cavour, Général Jacqueminot, Paul Ricaut, Fr Arago, Caroline de Sansal, Narcisse, Comtesse de Chabillant, and John Waterer. In Mr. Francis's stand, obtained second, I noticed Sénateur Vaisse, Gloire de Dijon, Paul Ricaut, Mdle. Bonnaire, and Louis XIV.

In twenty-four trebles, Mr. Keynes, of Salisbury first. He had some fine blooms of Paul Dupuy, Erég Nimes, Pauline Lanzezeur, Madame Vidot, Sénateur V François Lacharme, Colonel de Rougemont, Prince Jules Margottin, and Olivier Delhomme.

In twenty-four singles, Mr. Charles Turner, who obtained first prize, had fine blooms of Madame Charles Cra Anna de Diesbach, Devoniensis, Général Jacqueminot, Charles Lawson, Lord Raglan, Madame Vidot, Paul R Jules Margottin, Charles Lefebvre, Anna Alexieff, Gloire de Dijon, Madame Hector Jacquin, Madame Boutin, Ma Willermoz, Mathurin Regnier, Vicomte Vigier, Victor dier, Madame Knorr, Madame Boll, Comte de C Souvenir de la Malmaison, and Sénateur Vaisse.

It was quite too late for pot Roses, but for the same creditable plants were exhibited by Mr. Wm. and Messrs. Turner, Paul & Son, and Francis.

In the class for twelve blooms of any new Rose of Mr. Wm. Paul was first with Beauty of Waltham; and Cant second with Olivier Delhomme. A fine box of scented and Noisette Roses came from Mr. Hedge,prising Boule d'Or (very fine), Madame William, Reintoria, L'Enfant Trouvé (fine), Bougère, Moiret, Ma Sertot, Souvenir d'un Ami, Madame Bravy, President L'Enfant de Lyon. Mr. William Paul was second, and Hollingworth third.

Moss Roses call for no particular remark, nothing very noticeable amongst them.

The adjudication for the decorated vases or baskets seemed to me and others very odd. The first prize was given to a stand which contained not one good Rose, and violated all the principles of taste by having a huge piece of coral on the top and shells on the bottom stand—it was one of Mr. March's stands. It seems to me that the Judges are perplexed between the stand and the flowers, but in neither case do I think the award was a correct one; and the worst of such awards is, that they perpetuate that very badness of taste they are intended to destroy. The group which obtained third prize was a magnificent bunch of fine Roses, such as any one might place on their table; whereas the first was one I should have scouted for mine. But I suppose one must only say, "*Chacun a son goût*," but if the "*goût*" be bad it is unfortunate. Mr. Wilson Saunders' prize was won by Cécile de Chabillant; and in the class for six bouquets of Roses Mr. W. Paul was first with Coupe d'Hébé, Sénateur Vaisse, Madame Vidot, Prince Camille de Rohan, Charles Lefebvre, and Celine Forestier.

I have thus noticed the more remarkable features of the Show of Roses, and may at some future time give the general result of my observations. I regret that circumstances hinder my being present this year at the Birmingham Show, which I contemplate will be the best of the three.

And so ends the Royal Horticultural Society's Exhibitions for 1863, in which it may safely be said that as noble collections have been exhibited as were ever brought together, but of which a great deal of the beauty was lost by the place of exhibition. It is, however, doomed; and let us hope that next year may witness some attempt at tasteful arrangement in a place more suitable for the display.—D., Deal.

CLIANTHUS DAMPIERI CULTURE.

THIS most exquisite plant is a native of New Holland, where it goes by the name of the Glory Pea. I have had many losses in trying to grow it, and probably I am not the only one who has suffered. Such being the case, these few remarks may assist some, who, like me, have a great love for this beautiful climber. Many a batch of seedlings I have lost after potting-off, but at last I had the pleasure of seeing it grow and bloom most gloriously.

The secret I consider lies in not injuring in the least the young roots, for in this respect it is the tenderest plant I ever handled. The seeds should, therefore, be sown singly in small pots, and placed in a gentle bottom heat; but they must be removed to a cooler place so soon as they have germinated. The seedlings should be shifted into a larger-sized pot before they have time to root to the side of the one in which they were sown, and when they have grown to some 5 or 6 inches in height, they should have their final shift either into a large pot, or be planted out in a greenhouse, and trained against a rafter. They will succeed either way, but if a suitable place can be found, I should prefer the latter.

The soil I find this plant thrive in is a good fibry loam, with a slight addition of dung, leaf mould, and silver sand. It requires plenty of drainage, and will take a liberal supply of water. It also requires strict watching in its young state, particularly to keep its greatest enemy, red spider, away; but it will amply repay by its splendour any amount of care bestowed during the two years of its existence.—JUVENIS.

A SURE WAY TO SUCCESS IN STRAWBERRY GROWING.

IN No. 116 of THE JOURNAL OF HORTICULTURE, page 432 there is an interesting answer from Mr. Robson to "A. Z." on the subject of Strawberry-growing. I am able to confirm all Mr. Robson says, and I will add a few simple directions which will enable any one to command success with Strawberries of all kinds, provided those directions are fairly carried out.

The plan, which I gave in THE COTTAGE GARDENER some years ago, is nothing more than this. About the second week in March place round each plant a heap of half-rotten stable-manure, and if any fresh droppings can be added to it before putting on so much the better. A small quantity scattered

round the plants is not sufficient, but enough should be placed round each plant to stand 8 or 9 inches high after being firmly pressed down with the hands; and the ring of manure thus pressed down should extend to about 10 inches all round. Of course the plants must be 20 inches apart at the least.

The time for doing this is about the second week in March; if it is done before, or during winter, the plants are likely to run too much to leaf; if later than March the benefit is lost. When the right time is taken advantage of the next rains wash the rich juices of the manure to the roots of the plants, and the mulching material which remains protects them from drought during the rest of the season.

I have had sixteen years' experience of this plan, and never yet failed in having a first-rate crop of all kinds of Strawberries, British Queen included. I never gave, and never shall give, a drop of water to a Strawberry plant. I find that a much smaller number of plants is sufficient to satisfy my wants for preserving, for Strawberry feasts, and for two large dishes a-day during the season, than would be necessary under any other system. In fact, I estimate the produce of each plant, except British Queen, which is rather less productive, at one good dish from first to last.

Now it is a very easy thing to give these directions, and very easy also to follow them, but it is quite another thing to find people willing to carry them out. One man will sprinkle only a little fresh litter round his plants; another will say it is altogether too much pains to bestow on each Strawberry plant. In such cases I never take the trouble to say anything more about it. I have the satisfaction of knowing, however, that those who have followed out this plan fairly were well pleased with the results.

Last year a friend from Lincolnshire paid me a visit, and admired my success with Strawberries. I gave him full directions for his gardener to follow, and told him that the only difficulty was to get them carried out. He said, "Oh, I will take care of that." This year, at the end of May, I paid him a visit in Lincolnshire, and the first thing I did the morning after my arrival was, of course, to inspect the gardens, and make friends with the gardener. He at once took me round his houses, and showed some very fine crops of Grapes in all degrees of forwardness; then I saw the Pine and Melon-pits full of magnificent fruit, and some of both ready to cut; from these we went to the orchard-house, where everything looked healthy and productive; and finally we strolled round the kitchen garden. I stopped opposite to some Strawberries, of which there evidently would not be a quarter of a crop, and said, "You won't have much of a crop this year." He replied, "No; we never get much of a crop in these parts; the soil does not seem to suit them." "Do you never mulch them?" I said. "Oh! I declare, I believe you are the gentleman that wanted master to put hens'-nests round the Strawberries." I confessed to the soft impeachment. "Ah!" his reply was, "that might answer all very well in some places, but we have such a lot of birds here that they'd be always pulling them down, and littering the garden about." I left him without alluding to the subject again. It was a hopeless affair. It never occurred to him to try and see whether his fears were well-grounded or not. I myself am pestered with thrushes and blackbirds, but I never saw any litter in my garden; they may pull one or at most two heaps about once in the season, but the gardener sets them right again in half a minute.

The remaining advantages of this plan, besides being independent of the season, are freedom from slugs and from the splashing of the berries with the soil during heavy rains; and Strawberries may be grown for many years upon the same ground without degenerating in any way. I have already kept one piece of ground under Strawberries for sixteen years without the slightest loss of either quality or quantity.

In conclusion, the sorts I recommend for cultivation are British Queen, which is by very far the best of all; Keens' Seedling; Filbert Pine, an admirable Strawberry, and but little known, very excellent in flavour, and an astonishing bearer; and Black Prince for the early crop. For a late crop I prefer placing Keens' Seedling in a somewhat shaded and cool situation.

For greenhouse culture the Black Prince is by far the best. Of course the plants should be placed close to the glass;

and if they are treated with plenty of manure water, and stand in saucers, they may be depended upon to produce a good dish for every four pots. They come in five or six weeks before the out-door plants, and last until these are ripe.

If any one, like your correspondent "A. Z.," finds that he cannot make his Strawberry plants bear under ordinary treatment, let him try the method I have described, and I assure him he will not be disappointed even with plants of the first year. By the way, Strawberry plants should always be struck in small pots, and planted out, if possible, in August; a bad winter and spring will show the importance of this.—H. C. K., — *Rectory, Hereford.*

CUTTING-DOWN CANON HALL MUSCAT VINE.

MR. FISH some time ago startled the readers of this Journal by announcing that he had seen some very flourishing Vines during his visit to Ireland that had been sawn off but recently at the stem's junction with the root. On the evening of the 24th June I called on a friend, Mr. D. Ackroyd, gardener to L. Nathan, Esq., West Lodge, Bradford, and very soon stumbled on a Canon Hall Vine. We had so often seen this Vine with large bunches badly set and three parts of the berries ruined by the spot, that we felt indignant at the idea of growing Muscats along with other Vines requiring a cooler temperature; but now the Vine was so much altered in appearance that we could not believe it was the same. Having satisfied myself on this point—for the Vine was cut down about three years ago—I gleaned the following information from the intelligent and persevering gardener:—

"In November of last year the roots (three in number) were cut off 1 foot below the surface—that is, the Vine had only three bare stem-like roots without fibres, 1 foot long each, left. A little of the old soil was taken away, but very little, not more than a barrowful, and three bushels of cocoanut refuse put in the hole. In this the stubbed-up Vine was planted, and the ordinary soil of the border thrown on so as to level the whole neatly. There were other Vines in the border, so that it was impracticable to make a large hole. Shortly after this was done 1 foot of stable litter was put upon the border, and that, as might be expected, heated very little indeed. The house was started in the beginning of February, and ripe Grapes were cut on the 14th of June. The Canon Hall broke as well as any of the other Vines, never flagged under the brightest sun, the flowers set well, and the whole progressed extremely well. It had the same heat and treatment as the other Vines, and the result is as follows:—Length of fruiting portion of cane, 10 feet. (It was not headed down, but left its full length in the ordinary course of pruning.) The young leader is 1½ inch in circumference, with round plump eyes. There are nine good-sized bunches on the Vine, the majority being 9 to 10 inches long, 10½ inches across the shoulders, and the berries, remarkable for their evenness of size, measure 3 to 3½ inches in circumference, either round by the footstalk or the middle of the berry. They are just beginning to ripen, and will, of course, be larger yet."

In the same house—in fact, the only vinery—I noticed a companion Vine that had been inarched last year. The stock was an old Barbarossa that never did well, the scion Bowood Muscat, and the operation has resulted in seven good-sized bunches, and wood promising well for another year.

The other Vines were in capital order, a St. Peter's having nearly thirty large bunches upon it, and better set and finer-shaped bunches I have not seen. A Tokay was bearing freely, Hamburgs were fast approaching maturity, and a kind here called Victoria Hamburg was very fine. It much resembles, if it is not identical with, Pope's Hamburg; but, for anything, with a little more of the Esperione about it. It is a more compact buncher than the old Hamburg, more so in the berry, forms large shoulders, and is in every way a desirable variety. Notwithstanding that this is the only house set apart for Grapes, yet, with a proper admixture of sorts, fruit is had late in the season. The Sweetwaters are ripe now (June), Hamburgs will follow, then come Muscats and others and last of all the St. Peter's.

Under the Vines were Cucumbers in pots, with fruit nearly 2 feet long, and plants and Ferns too numerous to mention. The conservatory was neatly arranged, and gay with flowering plants. In a pit I observed some nice plants, as *Nepenthes distillatoria*, with a profusion of pitchers; *Ixora javanica*, *I. coccinea superba*; a good plant of *Pandanus javanicus* foliis variegatis; *Alocasia metallica*; *Alocasia macrorrhiza variegata* (small); *Allamanda Schottii*, *cathartica*, *neriifolia*, &c.; *Dipladenia crassinoda*, *Crotons variegatum*, *pictum*, and *longifolium variegatum*; *Vincas rosea* and *rosea alba*, *V. ocellata*; *Cyanophyllum magnificum*; *Cyrtoceras reflexa*; *Caladiums Chantini*, *Wightii*, *argyrites*, *Belleymei*, &c. In another house were a magnificent specimen of *Pavetta borbonica*; a fine specimen of the finest of all fine-foliaged or variegated plants, *Cissus discolor*; *Sphaerostema marmorata*, a poor thing under any circumstances, and it was as fine here as I have seen it; fine plants of *Stephanotis floribunda*, *Hedychiums*, &c., all of which are generally considered to belong to fine places where there are acres of glass and scores of hands. Never was a more mistaken idea. It is brains and a patient, dogged, and persevering will that can grow such in a small place. There are a neat lawn and flower-garden all in good trim.

I must not forget to say that last year Mr. Ackroyd took several prizes at the Bradford Show for plants, and the first prize for the best dish and largest bunch of Grapes. He yearly gets some fine Mushrooms out of his Melon-pits in winter, and all he does is to put a little spawn on the manure before the beds are earthed. Last winter he had them in frost and snow without any covering but the lights, and a specimen weighed 1 lb. I think he would willingly let any gardener see the Vine in question, and answer any inquiries respecting it.—G. A.

GARDENERS' FRIENDLY SOCIETY.

LIKE our friend of the Green Isle, who last week favoured us with a reminder in relation to the proposed Gardeners' Benefit Society, I have been expecting to hear week after week that the scheme had taken some definite form, and I have been surprised at the continued silence respecting it. I believe I have shown on a previous occasion that my views were in favour of the project, although I might have failed to state clearly that I would become a member, provided the proposed Society actually came into existence.

Why gardeners as a body have not come forward and supported the motion, as doubtless would have been the case with men of other callings, may appear inexplicable; but the fact is gardeners are not constantly together as men of other trades are; the nature of their business keeps them far apart; they meet very rarely in a body; the means offered for anything like social gatherings are few, and but a minority of them do or can take advantage of horticultural societies for the purpose of holding friendly intercourse, so that horticultural journals offer the only ready means of their communicating with each other. This means is far from being likely to excite or maintain an interest in any undertaking equal to that which is kept alive by personal intercourse in the case of men who follow their ordinary occupation in bodies; nor do I believe that the ordinary wages of gardeners are sufficient to induce them to be particularly provident, and at the same time maintain that respectability in appearance which seems to be required of them. In this respect I think there is still room for improvement, which probably will be accomplished when gardeners—that is, the average run of them, enter more deeply into the mysteries of their calling. How this may be remains to be seen; but a grand step will be taken in the formation of a general Gardeners' Society like that formerly proposed, and which I now advocate.—F. CHITTY.

CYANOPHYLLUM MAGNIFICUM.—In your Journal of June 23rd I saw an account of "A YOUNG GARDENER" having a *Cyanophyllum magnificum*, some of the leaves of which measured 26 inches long and 13 broad, and I was rather surprised at the note of the Editors, remarking that they had never seen one with leaves so large. Fancying mine were usually larger I went with my gardener and we measured

two of the leaves, one of which we found to be 32½ inches long and 19 broad, the others 33½ long but not quite so broad. Consequently I presume my mode of treatment must be even better than that of "A YOUNG GARDENER," and if it be worth having I shall be happy to impart it. —AN OLD GARDENER (AMATEUR.)

HAYBANDS ROUND ROSE STOCKS.

PERHAPS it may be of service to many of your readers who have Roses worked on half or tall stocks of the Manetti to mention a plan which I have found to succeed admirably.

I noticed this morning that a few Roses which I had worked on Manetti stocks at about half height looked very sickly. They broke feebly, and their leaves were much spotted. It occurred to me that as the Manetti answers well as a stock if it be covered with the soil, it might also answer if the stocks were covered so as to keep them damp and in the dark. Accordingly I had all my Manetti stocks wrapped round with small hay-ropes, which in dry weather are moistened every morning. This plan has been quite a success. The Roses have thrown out stronger shoots than they ever made since they were budded, and have become healthy and vigorous. But one of them—Général Jacqueminot—has blown as yet, and its flowers have been very fine indeed, much better than it ever bore before. Of course, no one would now bud on Manetti stocks; but any person who did so in years past may find my experience useful.

May I add that having a nice stock in which a bud of 1861 had failed last summer, and not wishing to lose it, I tied a piece of list around it, and kept it moist for about a month? At the end of that time the bark had become green, and rose so freely that I inserted a bud, which is now showing flower.—S. M.

THE STAMFORD HORTICULTURAL FETE AND ROSE SHOW.—JULY 8TH.

THE show of Roses was especially good; indeed, it was generally admitted to be superior, in point of quality, to any Show of the kind held this season, not excepting the Kensington one; and it was so because the very best date that could have been selected according to the season was that upon which the Exhibition was held, for out-door grown Teas could be cut so as to be worthy of being staged alongside of their hardier compeers.

When we mention the names of Mr. W. Paul, Mr. Francis of Hertford, Mr. Cant, Messrs. Paul & Son, Rev. S. Reynolds Hole, and others as being amongst the competitors, a fair idea may be formed of the Show's importance; and its extent will be understood when we state that the number of competitors was fifty, staging at least 1400 trusses. The day was happily of the brightest, and everything was done to contribute to the enjoyment of the numerous visitors who thronged in from a distance. Two military bands played alternately, and the whole arrangements were based upon those at the gardens of the Royal Horticultural Society.

But we will now proceed to notice the main features of the Show, and in doing so we shall only name the principal prizetakers, &c., as it is obviously not sufficiently interesting to the general reader to give the whole in detail, when the list comprises within its bounds some eighty-six distinct prizes.

The prizes for cut Roses, forty-eight varieties, three trusses of each, were severely contested, and, indeed, this was the case in every class set aside for cut flowers. Mr. W. Paul showed Maurice Bernhardt, very fine, a Rose of fine form, slightly imbricated, and in colour beautiful vermilion; Mr. Francis, of Hertford, Madame Rivers (which, though not fine in colour, is well formed), Sénateur Vaisse, and Lord Raglan; whilst Messrs. Paul & Son had fine specimens of Duc de Rohan (red, shaded with vermilion), and François Lacharme (bright varying carmine). Mr. B. R. Cant, of Colchester, had, conspicuous among many good ones, Alphonse Damazin, very deep glowing crimson.

In twenty-fours, three trusses of each (Nurserymen), Mr. Maycott had Sénateur Vaisse, a magnificent Rose; whilst Mr. Batley, nurseryman, Rugby, showed a fine stand; they

had the merit of not being so open and starry as some others in the class—here were Comtesse Chabillant (a beautiful Rose), Madame Rivers (generally good), Léon des Combats (splendid Rose, double crimson), &c. We should not omit, however, Charles Lawson, which is a remarkably fine Rose.

In collections of new Roses, there was a very close competition amongst those who showed in this class. Though Mr. W. Paul was second, we were greatly struck with the merits of his collection; but, owing to the many fair admirers of these noble flowers who incessantly flocked around these stands, we could not, without laying ourselves open to a charge of rudeness, advance sufficiently near to enter more directly into their various merits, or even take notes upon the same.

For the best twelve of any one kind, Mr. B. R. Cant, of Colchester, was first with Madame Furtado, rosy crimson; good. Second, Mr. E. P. Francis, of Hertford.

For the best twelve of any one kind of 1862, Beauty of Waltham carried off the first prize. No question can be raised, we think, as to the quality of this Rose, and, as compared with the drawing of it by Mr. Andrews, its colour is certainly better even than that given it by the artist.

In twenty-fours (Amateurs), the Rev. S. Reynolds Hole, Mr. Hunt, of Leicester, and Thos. Laxton, Esq., were the most successful competitors. It would be but a repetition to instance the many good trusses shown. Great credit was certainly due to Mr. Laxton, who, with a dusty suburban villa garden, exhibited successfully where seven competitors had staged; giving but another proof that success is ever an attendant on perseverance.

Amongst Exotic Ferns, Mr. Almey stood conspicuous. We noted especially fine plants of the evergreen *Platyloma rotundifolia*; the not-generally-grown, though useful, so-called *Platyloma adiantoides*—fronds longer, with the individual pinnae smaller than the old *Cassebeera hastata*.

In Fuchsias, Mr. Russell was first with some very excellent examples of cultivation. His plants, unlike the huge metropolitan ones, were as wide at the base where they overhung the pot as they were high, and exceedingly well bloomed. The better sorts were Little Bo-peep, Guiding Star, General Williams, Pearl of England, and Cœur de Léon.

Caladiums were ably represented by Messrs. Wood and Ingram showing a very fine plant of the unique Belleymer, white variegated slightly with green. We never saw the purple tint habitual in the leaves of this so prominently brought out. Could it have been grown in sun?

Begonias from Mr. R. Austen were fair samples of good cultivation. One called Marshalli, in the collection, we could not distinguish from the even more handsome old Rex. Madam Walter Butt shone conspicuous with its uniformly silvered foliage.

Roses in pots were very inferior.

Amongst some well-grown Achimenes by Mr. Russell, we noticed a fine purple.

The prize for newly-introduced plants was taken by Mr. Brown, for Caladium Veitchii, which, having but one large leaf standing conspicuously, put one in mind, to use a passing observation we heard a lady make, of the animal which Absalom bestrode in his anger. Messrs. Wood & Ingram exhibited a small plant of Caladium Lowii. From Mr. Brown came Gloxinias. The Marquis de St. Innocent, a pale colourless variety, was singular.

Some very creditably-grown Cockscombs were exhibited by Mr. Thompson, of Stamford. This gentleman's productions, not a few, were very creditable taken as a whole.

A device in flower-beds made upon an elevated platform with cut flowers in colours, gravel walks being ingeniously represented with mustard seed, a grotto and playing-fountain being attached, was very interesting. Amongst the plants around the fountain was an exceedingly pretty variegated variety of Kalosanthes or some kindred plant, not unlike the *Echeveria retusa* in form, becoming with age elongated upon a stalk which loses its foliage, beautifully variegated with gold, and just the plant for a Wardian case or other place where pleasing and singular foliage is in requisition. Messrs. Walters, the successful exhibitors of the above, knew no name for it.

TABLE DECORATIONS.—Three prizes were here offered for groups of fruit and flowers for the decoration of the dinner-

table, based upon the regulations in practice with Sir Wentworth Dilke's prizes at Kensington. We cannot attempt to criticise this; suffice it to say, that in no one instance were either birds, beasts, or fishes exhibited.

[Our reporter having taken the first prize is the reason for his silence. We extract the following from the *Lincolnshire Express*:—"That showed by Mr. W. Earley, gardener to F. Pryor, Esq., of Digswell, Welwyn, was an excellent specimen of art, and secured the first prize. Mrs. Walker, of Stamford, obtained the second prize. This lady's design was exceedingly pretty, the top consisting of three cornucopias combined, containing Cherries, Grapes, and Strawberries. Mrs. Jos. Phillips exhibited a vase of flowers which for elegance and taste displayed in the arrangement was unequalled. The prizes for the groups of flowers, &c., were awarded by a jury of ladies. There was also exhibited in this tent a very attractive bouquet of artificial flowers, constructed by Eliza Mary Hunt, of Burley-on-the-Hill, who has been an invalid from childhood."]

For the same reasons we cannot pass any remarks upon hand-bouquets, &c., though each had classes and were well competed for.

FRUIT.—There were some good samples of fruit, Mr. Matheson, gardener to the Marchioness of Exeter, showed fine collections, as also two fine Black Hamburg Vines in pots; the two when arched together counting at least twenty-four good-sized bunches. Mr. Bowman, gardener to John Hardy, Esq., Grantham, had exceedingly fine samples of the Golden Hamburg Grape, good Black Hamburg Grapes, and Green-fleshed Melon, with each of which he took the first prizes.

In conclusion too much cannot be said in praise of the uniform courtesy of the two Honorary Secretaries, Messrs. Laxton and Hewitt.—W. EARLEY, *Digswell*.

STUDLEY ROYAL.

STUDLEY ROYAL, near Ripon, Yorkshire, is the residence of Earl de Grey and Ripon. The pleasure grounds are celebrated for their beauty and extent, and by many are considered the finest of their kind extant. John Aislabie, Esq., a good old country gentleman, assisted by his gifted gardener, Mr. Fisher, formed the grounds at Studley Royal about the year 1720; and his successor William Aislabie, Esq., spent a long life in beautifying and extending what his father had founded.

The pleasure grounds are situated in a narrow deep dell, called the Skell, with steep, irregular, wood-covered sides, and traversed by a stream. The situation must have been very beautiful in its natural condition, and, consequently, required a tutored eye to bring it into its present improved picturesque state. The eye and mind must have been well acquainted with what forms a good landscape picture, and not only that but with the combinations which produce one. The proprietor as well as the gardener had, judging from the results of their efforts, a sound knowledge of pictorial effect. They were not forming a picture for themselves only, but one that time would improve and which now may be said to have attained the height of its beauty.

An adequate account of all that is worthy of note in these grounds would almost form a large volume; I must, therefore content myself with noticing a few of the principal features.

Arrived at the park lodge a noble avenue of Limes is entered, shutting out the view of the woodlands on each side; but at times a glimpse is caught of the many fine Oaks with which the park abounds, some of them girding 30 feet a foot above the ground, and a view of the mansion to the right. Midway in the park, turning to the left, along an avenue of Beech trees of stately growth, I presently came to the beautiful little valley of the Skell. To the left of the entrance to the grounds is a lake covering twelve acres, into which the water or stream from the grounds empties itself by a fall of about 6 feet. The fall is accompanied by a low turret balcony-wall, and on the lake were aquatic fowls, now and again uttering their peculiar cries. Ascending a steep bank from the lake, shaded by a canopy of Beech and Chestnut trees, the gates are reached.

The entrance to the grounds is by an iron gate with some

inadequate lodges by its side, where each visitor pays 1s. and enters his name in the visitors' book. Great and small do this; and as this nominal charge is applied to keeping in order grounds which contribute largely to the enjoyment of the public, no one can cavil at the sum, for very few people would like to keep at their own cost some hundreds of acres for the good of the manufacturing community. The kind and generous feeling of those who allow their grounds to be seen by the public, who for the most part are shut up week after week in the smoky, impure air of our large towns, cannot be too highly eulogised.

These grounds are open every day except Sunday, and guides are ready at the gates from seven o'clock in the morning until five in the evening, to conduct and point out interesting objects to the visitors.

Passing along a broad and comfortable walk canopied by foliage and with a dense tall screen of Yew to the left, shutting out the view of the other side of the valley and the water in the hollow, yet with a few openings, embrasure-like, that reveal some of the beauties, a pleasing feature is reached. This is a steep bank planted with common Laurels pegged down so as to hide the whole of the ground, and kept about 2 feet high by cutting back the shoots once or twice during the summer.

Beech trees of large dimensions overshadow the walk; and as the eye catches a glimpse of an octagon tower situated on the opposite side of the valley a cast, said to be lead, of two contending gladiators near the water below, is seen. There is still a dense wall of Yew to the left and its canopy overhead, but an opening is reached that has taken many by surprise, being a prospect of the valley in its widest part. A little to the right stands a building called the Temple of Piety, well backed by the foliage of the trees of a neighbouring slope. Beneath is a level piece of ground, where the water from the upper part of the grounds is expanded into spaces of lake with accompanying statues of Neptune, Bacchus, and Galen.

A lover of fine trees can hardly pass some to the left that stand near glades of lawn sloping from the eye to the water edge. A Norway Spruce (*Abies excelsa*), near the walk, but somewhat entangled with the adjoining shrubs, is straight, without any apparent deviation to the top, and displays a luxuriance I have not seen elsewhere. It is 126 feet high, and the stem more than 12 feet in circumference above the roots. Another, nearer the stream and less enclosed by other trees, attracts reader attention: it is not, however, so lofty, and is but 11 feet in circumference of stem. A North American Spruce on the other side of the grassy opening to the Norway Spruce is 14 feet in circumference of stem, and 135 feet high. Almost adjoining stands a fine example of the Hemlock Spruce (*Abies canadensis*), 70 feet in height, with a stem nearly 8 feet in circumference. Supposing these trees to have been planted by Mr. Aislabie about 1720, a useful criterion of growth is furnished to subsequent planters of Conifers.

Passing on you begin descending the declivity under the shade, and perhaps, may see as much beauty in a Sycamore tree 70 feet high without a branch, as in a gorgeous flower parterre. Evergreens and groves adorn the declivity, and from a cavern a stream issues overshadowed by a dense mass of Beech foliage.

The eye scarcely loses sight of this before a view is gained across a bank of Yew and Laurel, overhung with nobler foliage, of the long canal as it is called, the moon and crescent ponds, with their grassy terraces, and of the lake in the park, backed up with woodland scenery. The statues in the valley and an octagon tower to the right rising from a clump of Firs are also interesting objects.

Continuing my journey, I have another peep through the Laurels, and see the statues Hercules and Antæus in contention, in the narrowest part of the dell. Diverging to the left instead of following the path through the woods, but still overshadowed by old trees, I crossed to the other side of the valley by a rustic bridge, where the stream glides silently along. On the bank of an irregular pool called Quebec are several naturally-inarched trees, none of them being more than 15 inches in circumference of stem. On a small island in this water stands a monument to the memory of the gallant General Wolfe, and beyond I soon found myself in a formal yet beautiful valley, in which is a build-

ing called the Temple of Piety. Inside of this is a mural basso-relievo of the Roman female nourishing her captive father from her breast.

The view here is confined to the valley yet possessed of much peculiar beauty, but the scene suddenly changes. I passed up a steep path in the wood, but just stopped to make a note of an old Yew that is fast decaying and said to be 700 years old. It is only some 5 feet round, and how it came to be 700 years old without attaining the majestic proportions of its neighbours seems curious. Passing through a short subterranean passage partly hewn through rock the octagon tower is soon reached, and from it we have a view of the objects so recently visited; but seeing them again from another and distant point does not give the sameness one might expect.

Studley Hall to the north is seen from here; and in the opposite direction How Hill, with a mimic tower begirt with shade, is a conspicuous and interesting object. Leaving the octagon tower I passed a long but purposeless avenue of Beech trees, in no way improved by the sombre hues of Firs, which give an air of solemnity not desirable in pleasure grounds. I always deprecate avenues formed of deciduous trees and evergreens intermixed. Evergreens are formal, lack gracefulness, and though noble-looking, are seldom majestic; and such mixed avenues are less harmonious than those composed exclusively of deciduous trees. Conifers contrast best with formal landscape work, as in gardens where oriental fashions predominate, and they are more adapted to back-up and relieve statuary and the dazzling Italian or geometrical flower parterres than to plant with deciduous trees in avenues or groups. Cedars are well enough for an avenue leading to a mausoleum, but in a richly wooded district they are too formal. They are more fitted for a hill top or a mountain side than to plant in right lines. Pursuing the ample path I was delighted with an aisle of Beech trees; but an opening between Yew trees to the left showed an obelisk in the centre of the opening, whereas, to please me more, it ought to be at the end most distant from the eye.

Through an opening towards the park a view is obtained of Monkenshaw Lodge, and the Roman Monument high above the Skell.

A little further on, turning to the right, a pillared pavilion dedicated to Fame is reached, and on all sides but one entered with difficulty. I cannot forbear protesting against visitors defacing the pillars by writing their names in pencil, and I hope such offending parties will some day be exposed.

I noticed as I walked along the Sabine Rose (*Rosa Sabini*) in flower, but whether indigenous or not I could not ascertain; and among wild plants I did not see any rarities, nor, excepting *Polystichum aculeatum*, any quantity of the Fern tribe. *Asplenium fontanum* was formerly very plentiful. The path is next among noble Oaks, and though very closely planted, occasional glimpses of the valley create a longing after that noted Fountains Vale.

Arrived at Anne Boleyn's Seat, fatigue is forgotten as soon as the doors in front are thrown open. The prospect that then without warning bursts upon the eye of the spectator is beyond the powers of pen or pencil to convey. It must be seen to be appreciated, for it surpasses everything I ever before looked upon, and is lovely beyond comparison. In front are the ruins of Fountains Abbey, desolate but beautiful. The view is bounded on one side by limestone rocks and wood-covered hills, and on the other by a lofty wooded hill, and a brook gliding gently from the ruins through a green meadow to a lake that seems to wash the base of the peninsula on which the spectator stands.

Near to the ruins, on a neighbouring hill, are some Yew trees, under which the monks resided while the monastery was building. So says tradition. Their original number was seven, but their number is now reduced. Presuming the abbey to have been built in the twelfth century, these trees—taking into consideration the time that must elapse before they would be of sufficient size to afford shelter for the monks—cannot be less than a thousand years ago. After a stroll around and inside the abbey ruins, said originally to have covered twelve acres, I continued my route on to the Echo under the rocks, and re-entered the grounds by the rustic lodge.

I cannot quit this sylvan paradise—coeval with the works

of Kent and Brown, whose offers were often declined by W. Aislabie, Esq., who equally with his father had a good knowledge of landscape gardening—without expressing my regret at having so little time, and apologising for the desultory description given. Being my maiden description I ask for a little leniency from the sledge-hammer critics, though I am about to propose a few alterations.

I would suggest a copious thinning in some parts of the grounds, and planting in others. Some of the views require opening-out, and others are too wide from the point of vision. A judicious planting of the newer kinds of deciduous and evergreen trees and shrubs would add much to the beauty of the place, for the monotony of the vegetation, principally such as is indigenous to the locality, gives a sameness to most of the views. I regret they are not there already, for, judging from the few there are, the soil and climate appear uncommonly well suited to their growth; but I feel sure alteration may safely be left to the present owner of the grounds.

In journeying up the hill through the park I came to an obelisk, the view from which along an avenue mostly of Limes is very effective. Ripon Minster, at a distance of two miles from the entrance to the park, appears to stand at the end of the avenue, and beyond its towers a fine view of the open country is afforded. The avenue is about a mile in length, and somewhat broken in places; but still, whether looking towards the obelisk from the entrance gates or from it towards Ripon Minster, the effect is strikingly beautiful.

The trees in the park are some of them of large proportions. The Oaks are magnificent; one was 32 feet in circumference above the roots, and many were more than 30 feet round.—G. A.

(To be continued.)

CATERPILLAR-EATING BIRDS.

HAVING read with interest Mr. Robson's opinions on small birds, I venture to offer a few words on what I have noticed on the subject, as during the past season I have frequently watched the Black Cap (*Curruca atricapilla*), the blue Titmouse (*Parus cœruleus*), and the Chaffinch (*Fringilla cœlebs*); and I saw the two former feed their young ones chiefly with caterpillars, especially the Titmouse, the old birds taking two and even three at once. I have not seen Chaffinches feed their young with caterpillars, but I have seen them pick them off the trees by scores.

I will not attempt to speak of the harm all kinds of birds do; but I think there is not one that does not do some small amount of good at different seasons—for instance, the Blackbird and Song Thrush, inveterate enemies to nearly all kinds of fruit as they are; and I am inclined to say a word in their favour.

A nest with four young ones was taken from a tree, put in a cage and replaced for the old ones to feed, which they did, with what I cannot say; but I have found in the cage caterpillars that were dropped in feeding the young. What I have stated I have been eye-witness to, and I have no doubt that some of the craft that have had more experience and feel interested can give more light on the subject.—S. ROGERS.

HOW THEY LIVE AND LEARN IN THE NORTH.

MANCHESTER FIELD NATURALIST SOCIETY'S EXCURSION TO HARDCASTLE CRAGS.—On the 27th ult. about sixty members of the Manchester Field Naturalist Society visited Hardcastle Crag. Having given an invitation to the Tormorden Botanical Society, they were accompanied by about twenty-five of the members, and by an equal number from the Huddersfield Philosophical Society. The latter were mostly geologists and entomologists. The Manchester and Tormorden parties arrived at Hebden Bridge at half-past 1 p.m., and went to the White Horse Hotel, where many took lunch. They then started for "the Crag," two-thirds of the company consisting of ladies—among whom was Mrs. Hugh Stowell, who had the vasculum strapped on her shoulders in true British style; Canon Hanson (her brother) was also one of the party. While on their way up the valley, its

surpassing beauty, wood, hill, and stream combined—was the subject of universal remark; the ladies especially were lavish in their commendations, and long before the day's rambles were ended, had exhausted their vocabulary of terms in which to express admiration of the lovely and picturesque scenes in which they found themselves. Among the Ferns gathered were—*Polypodium phegopteris*, *Polypodium dryopteris*, or Beech and Oak Ferns; these were found in abundance all up the valley. Towards the top and near to High Greenwood, *Schistostegia pennata* (Shining Moss) was found in limited quantity. Lower down the valley *Hypnum ochraceum*, &c., and several fine forms of *Athyrium* and *Lastrea* were noted, and the fine evergreen fronds of *Polystichum lobatum* and *aculeatum* were conspicuous in very many places; a solitary plant of the *Asplenium trichomanes* was also seen. Many of the Manchester and Huddersfield parties had to return by the 7.30 train to take the 'busses, &c., from those towns to their respective homes. Afterwards those who were able to stay later took tea at the White Horse Hotel. Mr. Grindon, Secretary of the Manchester Field Naturalist Society, when tea was over, made a *résumé* of the day's employments and enjoyments, and the remainder of the party left by the later trains. Perhaps a company of so *élite* a character, in such numbers, never before visited the Hardcastle Valley; the day was delightfully fine.—*Hatifax Courier*.

MIMULUS CUPREUS AND AMARANTHUS MELANCHOLICUS.

I HAVE tried both of these this season. They were sown in strong heat in February. *Mimulus cupreus* grew very rapidly afterwards in a cold frame, always kept close, and covered with matting by night; it is now in flower, but about half of the plants are inferior in colour to the rest, one half being a rich orange scarlet, and the other a sort of washed-out orange. I have placed them in a ring round a bed of *Heliotropes*.

The *Amaranthus* grew readily, and promised well at first. I kept it longer in close heat. I hardened it off as gradually as I could, but the leaves turned yellow at the base, and then dropped off in a truly melancholy way. Those plants only which have been kept in a close cold frame, and constantly supplied with liquid manure, are doing well.—S. L. J., Cornwall.

STRAWBERRIES IN FRANCE.

WOE to the man who ventures to express his opinion, if that opinion fall not in with the notions of exhibitors; and fortunate for him if, by a long course of no gentle application of abuse, his skin becomes rhinoceros-like, so that trifles do not worry him. The first place for experiencing the "pleasures of abuse" I give to the office of a judge, the second to the reporter of a flower show. If one happens to say that Mr. A's Grapes were superb, and Mr. B's magnificent, and Mr. C's excellent, even then the superlatives are measured out carefully; and if one be not as expressive as the other, but if Mr. D's are said to be wanting in flavour or colour, immediately all the "quills of the fretful porcupine" are protruded, and a great injury supposed to be done. Surely, the least thing one might expect is that credit would be given for fair intentions, even though one were set down as an ignoramus. And so M. Ferdinand Gloede attacks me for what I said about his Strawberries; and, if I understand his charges, they are these:—

1. That I had some sinister motive in representing his Strawberries as inferior.

2. That they were excellent, or they would not have obtained a first prize.

3. That the reason that they were not first-rate was because the Exhibition took place at a bad time for his plants.

1. As to this charge, I am at a loss to conceive what it means. I do not know anything of M. Gloede personally. I only know that he has written on the Strawberry so strongly that I was led, when I saw his name, to expect much. He is the correspondent of a gentleman whom I esteem very highly, and the above is a motive in

misrepresenting what I saw. It could not be because he was a Frenchman, as I think your readers pretty well know by this time that I have ever desired to say what good I could of our neighbours, of whom, indeed, I am by descent one.

2. As to the second charge, I can only say that he had, if I recollect rightly, no competitor, and that there was not a bit of fruit at the Show that would have gained a fifth prize at our metropolitan exhibitions.

3. As to my possessing no knowledge of practical gardening, I do not exactly see what is meant. I certainly do not go out for a day's work, nor do I often take the spade in my hand; but I do claim to knowing a little about even Strawberries, and perhaps if I had said M. Gloede's were admirable, my practical gardening would not have been called in question. I did not pretend to know all about "practical gardening" in France, nor the climate of Les Sablons. I spoke of the Strawberries as I saw them; and that my judgment was tolerably correct is evident, I think, from M. Gloede's own showing, or else why endeavour to explain that the time was a bad one for him?

I have thus disposed of M. Gloede's critique, and would strongly urge him not to look for bad motives where none are intended, and to believe that if criticism is adverse it may at the same time be impartial.—D., Deal.

THE CULTIVATION OF ROSES IN POTS.

SECOND SEASON.

I PREFER potting in this way:—Having placed my compost on the potting-board, I procure a quantity of turves as they are brought in from the field, and very rough, pretty dry, well decomposed cowdung. The pots being drained, and on the potting-board, I tear off one or two large pieces of the turf, and put it into the bottom of the pot on the drainage, top downwards. In general this will be of sufficient height for the ball of the plant to rest upon; if not quite high enough, I put in a little of the mixed material to raise it to the required height; next, tear off pieces of turf, 6 or 7 inches long, and 2 or 3 inches wide, and as many thick; about four such pieces should be crammed in between the ball and the side of the pots perpendicularly. Between this, place large pieces of rough cowdung, nearly equivalent in bulk to the size of the loam, and fill up all crevices and cavities with the mixed compost, finishing off with the same, and making the whole quite firm. During the operations, care is required not to leave any cavities between the mould and pot, but to fill all up compactly. This is to be the treatment of the strong-growing varieties. The Teas, Chinas, &c., may be potted in a similar way, except leaving out a portion of the rough cowdung, and using more of the mixed material in its place.

This manner of potting may appear strange to some; but if such persons will give the after-treatment I shall now describe, the beauty of the plants in the following season will be to them equally novel. The great use of this rough potting during the following season of growth, will be apparent, allowing, as it will, water, whether soft, or liquid manure, to pass freely through, and the air to act upon the roots.

The plants ought now (September), to be properly trained—those intended for climbers, such as the Hybrid Chinas, Hybrid Bourbons, and strong-growing Noisettes, round neat stakes, 3 to 4 feet high. If these had been thinned during the previous summer, they will now require little or no pruning, but merely to have their branches tied neatly and regularly round, shortening the extreme points. Any very strong-growing Perpetual or other summer Roses, may be trained in a pyramidal form, by placing stakes round the side of the pots, and making them meet at from 2 to 2½ feet high, passing a hoop round them at about 1½ foot from the pot; the branches must be tied down to the rim of the pot, and round the stakes up to the summit, bearing in mind to keep the branches well down, as there will no difficulty in filling up the top the following spring. These, like the others, do not require much pruning; thinning-out where crowded, shortening where too long, and regulating the branches, will be enough. This applies also to the less robust Hybrid Perpetuals, Bourbons, Chinas, Teas, &c.; the plants

being all young, the wood thinned out and stopped when necessary, during the previous summer, they only require to be properly trained, with a little shortening. All the canes I am now speaking of, are best suited for bush Roses, and in training, the branches must be tied well down to the rim of the pot all round; any branches in the centre of the plant can be tied down to the lowest branches, but not in too close or crowded a manner. I am aware some first-rate growers recommend pruning many of these hard in, at this stage of growth; in this I can see no advantage, as the plants, under proper treatment, will be full of young wood, and to prune them hard would spoil the bloom. All that I find necessary is to thin out where over-crowded, to shorten where too long, and to properly regulate and tie-out the branches.

The plants will now require to be placed in their winter habitation, and nothing is better than a cold pit facing the south, the lights being at a very acute angle, in order to catch every ray of light and sun. Let the plants be placed upon inverted pots, as close to the glass as possible, keeping the delicate varieties, as the Teas, Chinas, &c., at one end by themselves. Leave the lights off night and day during autumn, except in case of rains, from which they must be scrupulously protected. During the winter the lights must be off all day in settled weather, and tilted up by night to allow a circulation of air among the plants, shutting close only in case of very severe frosts and wet; slight frosts are not injurious. Through the winter they require little or no water. I have had them a month or two without a drop, and it should be given only when the mould is very dry; the great point of winter treatment being to protect the plants from rain, to give very little water, and to allow them abundance of air.

About the end of February, many of the Perpetuals, Bourbons, Chinas, Teas, &c., will commence growing, and the slight protection which they have will facilitate this. About this time they should receive a surfacing of rotten cowdung, from 1½ to 2 inches in depth, taking out a portion of the mould to make room for it, particularly by the rim of the pot. If it is desired to have a portion of the plants in bloom early, the end of February is an excellent time to remove them into a warm greenhouse—a span-roofed house is the best; and here the plants will progress rapidly, and come early into bloom. But I will leave this structure and return to their present quarters, and bloom them there. As the plants progress in growth they must be frequently looked over, tying the lower branches of all down to the rim of the pot, and the other branches of the dwarf Roses neatly and regularly down to them, but not leaving the centre open or bare. The pyramidal plants should be trained regularly from the rims round the sticks to the summit, and the climbers in a similar way; they should also be turned round in the pit once or twice a-week, that they may not get one-sided. Through the spring, while the plants are growing, particularly in March and April, air must be regulated with caution; the young shoots being extremely soft, the cold harsh winds of March would be very injurious to them, and from these they must be protected, giving air at that side of the pit from which the wind cannot beat upon the plants. By night they should be shut close to avoid spring frosts—these slight frosts being more injurious when the plants are so far advanced than 12° to 15° would be in the depth of winter. I have even found it necessary to well mat the pit where the Teas and Chinas were, in March, when severe frosts were expected, and the plants appeared liable to be frozen—a thing not unfrequent at that season. Alterations of the weather in spring are very injurious to delicate Roses; and, from the effect of a little frost at that season, I have

seen large branches and whole plants of Tea Roses die off: hence the great care necessary to protect them from frost and cold. At the same time, no opportunity should be lost of removing the lights from the whole collection every fine day, and for as long a time as possible, that the shoots may not be weak or drawn; they should be exposed to all the light, and to soft rains, which are very beneficial, protecting them from cold or heavy rains.

By the middle of April all danger from severe night frosts being past, they should have air all the night, by tilting up the lights at the back, and keeping the lights off as much as possible by day; following this up to the middle of May, when many will be coming into bloom. By the beginning of May the pots may be removed from under the plants, and they set on the bottom of the pit, provided it is not too far from the glass—not more than 9 inches. From the end of April to the end of May, and later, till the blooming of the last plants, the pits should be sprinkled every fine day, morning and evening, around the sides, on the ground, and over the foliage of the plants until the blooms begin to open, when it should be discontinued. It should be performed with a very fine rose-pot, or a syringe. The foliage, under this treatment, will be remarkably clean and healthy. In wet or cold weather this must not be performed, as mildew would be the inevitable consequence. After my plants had

been top-dressed in the spring, and when commencing growth, they received a watering of liquid manure. Such waterings are not necessary to be repeated before the end of three weeks; and after that once a fortnight will be often enough, until about the middle of May, sooner or later, according to the weather and the forwardness of the plants. About that time we may expect the buds to be swelling, and the liquid manure may be given once a-week, and continued through their blooming; when given the plants should have a good soaking, and at all intervening times from the commencement of their growth in early spring to the end of their blooming, soft water must be used.

All strong watery shoots as they make their appearance should have their extreme points pinched out when 6 inches long, and through the whole season of growth continual attention is necessary to tying, training, and taking off the suckers of worked plants as soon as they appear. From the commencement of their growth to the end of the blooming time, as soon as the least sign of green fly is visible, they must be fumigated. Caterpillars in the leaves and buds during growth should also be looked closely after. If the weather is fine about the middle of May, a little shade may be given for a few hours each day with thin gauze, as the buds by this time will be swelling. On the opening of the blossoms the plants should be moved into a cold north house, and kept rather close and shaded, where they will bloom finely; a cold pit facing the north will answer the same purpose, but in this situation they cannot be seen to advantage.

The Roses having bloomed, all dead flowers should be cut off, and the plants placed back in the pit from whence they were taken; here they may have plenty of air and light, and may remain until they have perfected their growth, during which time they may have liquid manure about once a fortnight. After completing their growth, let them be placed out-doors in an open airy situation, any straggling blooms or suckers that may be produced being cut off. The plants may remain out of doors until the end of September, when they will require fresh potting. This may be performed in the same way as the potting in the preceding season, except that the balls may be reduced a little more, and the plants being old will require a portion of the old wood to be



Rose Coupe d'Hébé.

cut out, and the young wood shortened, thinned, tied down and trained as before.—(J. SAUL, *Durham Down Nursery Bristol*, in *Gardeners' Magazine of Botany*.)

BLOOMSBURY WORKINGMEN'S FLOWER SHOW.

THIS took place on Wednesday last. There was a capacious tent between 60 and 70 feet long and about 40 feet broad, with the plants arranged on four lines of tables, one on each side and a double line down the middle. There were between 200 and 300 exhibitors, and between 400 and 500 plants entered for competition. Altogether there were more than 500 plants, as some were sent which could not compete.

The largest class was the one confined to the densest district in the parish, where the first Show was held, and which has kept the lead ever since. There were six classes in all—four for adults and two for the children at the schools. In every class were offered prizes for Fuchsias, Geraniums, and Annuals, three prizes for each in each class, the highest being 10s. for adults and 5s. for children.

At the last Show (1861) decidedly the best plants were shown by the servants. It is worth notice that the same servant gained all three first prizes at this Show, and, in the classes for Geraniums and Fuchsias, with the very same plants as those with which she gained prizes two years ago. This, at least, shows how well plants can be kept in an area for a long period.

In the plants which competed with hers were much more recent introductions into the parish. There is one thing connected with the Show which should not occur, and that is that numbers of people who have plants do not enter them for the prizes. If only half the plants in the parish were entered the Show would be twice as extensive.

One man sent some very good specimens of Dahlias grown in one of the worst parts of the parish, to which was given an extra prize. Mr. W. Sowerby was Judge; but, in spite of all his pains, of course there was a great deal of grumbling.

The *Times* made a mistake in saying that the miniature trees were shown by the school children. They were placed between their classes, but were lent by some ladies of the parish; and Miss Twining lent a small Palm which she had herself raised in a small pot.

The *Telegraph* made one very true remark—that those who seemed to know least of what was going on were the poor people themselves. There seems to be no means of rousing them.

Lord Shaftesbury gave away the prizes very judiciously, but in his speech made a mistake, which it must be supposed he had no means of knowing was a mistake, in lauding Mr. Bayley the Rector in connection with the Show, while he has not taken five minutes trouble about it; and Mr. Parkes and Mr. W. H. Bosanquet, who have had all the trouble, did not get one word of acknowledgment even from Mr. Bayley.

Between 2000 and 3000 people were present, and altogether it was a gay day for Bloomsbury. The inhabitants of the Square, whom there was such difficulty in inducing to give the use of the gardens, were delighted. Many prizes for annuals were not awarded.

WEIGHT OF FRENCH FRUIT.—At an exhibition last autumn at Chartres, in France, the following are the weights of some of the fruits—Pears and Apples. We have reduced the French weights to decimals of pounds, but we give the French weights also. It may, however, be useful to some of our readers to note that a kilogramme equals 2.2047 pounds avoirdupois; 1000 grammes equal 1 kilogramme. The weights are remarkable, but Belle Angevine, or Uvedale's St. Germain, has been produced of a much larger size in this country. The specimen exhibited at the St. James's Hall show, November, 1858, weighing 5 lb. 15 ozs.

PEARS.	Gramm.	Pounds.
Belle Angevine, à M. Debout, de Cornet (Loiret)	1.66	2.37
Belle Angevine, à M. de Montboissier .....	.950	2.10
Doyenné d'Hiver, à M. Baubion, de Nogent-le-Roi .....	.900	2.00
Duchesse d'Angoulême, à M. Chapet, de Nog-le-Flaye .....	.727	1.00
Grandeur d'Anjou, à M. Baubion .....	.488	1.00

Grammes.	F
Curé, à M. Baubion .....	.487
Calebasse Boec, à M. Biard, de Châteaudun .....	.510
Saint Germain, à M. Courbe, de Nogent-le-Roi .....	.493
Calebasse Victoria, à M. Humery, de Châteaudun ..	.354
Belle sans Epines, à M. de Lecluse, d'Unverre .....	.500
Beurré Maudslayi, à M. Langer de Brou .....	.540
Triomphe de Jodoigne, à M. de Reversaux .....	.475
Triomphe de la Pomologie, à M. Gaudiche .....	.370
Belle Angevine (four), à M. Courbe	3.150
Beurré Superfin, à M. de Reversaux .....	.354
Bergamotte Sageret, à M. Biard .....	.300
Bon Chrétien d'Auch, à M. Biard .....	.470
Bon Chrétien Turc, à M. de Baulny .....	.590
Bon Chrétien d'Espagne, à M. de Boisvillotte .....	.456
Catillac, à M. Courbe .....	.380
Beurré Diel, à M. Courtois, de Chartres .....	.524
Colmar d'Arenberg, à M. de Lecluse .....	.500
Crasanne, à Mme Maïscat, de Chartres .....	.488
Gilgil, à Mme d'Astorg, de Beauvoir .....	.520
Râteau gris, à M. Caillott, de Châteaudun .....	.610
Figue d'Alençon, à M. Damalix .....	.300
Bergamotte Espere, à M. Biard .....	.300
Bon Chrétien d'Hiver, à M. Rousseau	1.510
Beurré de Rance, à M. de Baulny .....	.568
Louise Bonne d'Avranches, à M. Bouthillier .....	.245
Bergamotte Sageret, à M. Moret, de Châteaudun .....	.750
Celdon, à M. Gaudiche, de Châteaudun .....	.490
Bergamotte Espere, à M. de Bossay, d'Arron .....	.267
Bezi de Chaumontel, à M. Lecompte, de la Perrine ..	.387

APPLES.

Belle Dubois, à M. de Baulny .....	.700
Calville Saint Saver, à M. Rousseau .....	.295
Calville Blanche, à M. Loynes .....	.342
Reinette de Bretagne, à M. de Montboissier .....	.340
Reinette Dorée, à M. de Bossay .....	.290
Reine des Reinettes, à M. de Reversaux .....	.337
Reinette du Canada Grise, à M. de Reversaux .....	.456
Reinette de Caux, à M. de Reversaux .....	.287
Beauté de Kel, à M. Crignon de Montigny .....	.282
Alfrieton, à M. Rousseau .....	.363
Maltranche, à M. Rousseau .....	.365

NOTES FROM AN INDIAN RAILWAY

THE only fruits which I have tasted as yet as native Gooseberry (*Physalis peruviana*) and Guavas. former I like very much, the latter not at all, though jelly is first-rate. During the rains is the time for the fruits, so that I hope soon to write to you my id Mangoes, &c.

You ask; "What do you live upon?" Moorgies (ducks, and guinea fowls—guinea fowls, ducks, and me day after day, week after week; the only addition a bit of mutton, certainly not oftener than once a fortnight for though we have a mutton-club, we cannot get any to supply the place of those we kill, so that we are stingy about diminishing our stock. We live upon for about a fortnight or three weeks, until we are tired of it, and then some one ventures to suggest, it time to have a bit of mutton?" Every one says this think it would be a pleasant change, so next day our of sheep is diminished by one. After this piece of vagance we return again to our moorgie diet, until in another fortnight some one else is rash enough to another very seductive remark about mutton being nice."

The Moorgies may be imagined as like a fattened without a tail. These are called "chotah wallahs" fellows), and are used for curry. Though called "ch they never become larger, and they lay eggs no bigger a pigeon's. The "burra wallahs" (large fellows), are the size of a small game hen; evidently of a different to the others. Our game hens in England are mo them, and small bantams are somewhat like the "ch They have neither crests on their heads nor feath their feet. When the engineers first came here the to buy more than twenty for a rupee (2s.), but I should think it very good to have sixteen for the same if they were all large.

You ask what chupatties are, of which so much was during the Sepoy mutiny; and, curiously enough, every day on which I answer the question I have a piece of bread—I may say the first piece during the five months, and a very pleasant change it is too. W a native who understands making it just come from bad, so that I hope we shall continue to have that same time. I say "I hope" because these reti

(bread fellows) are very independent beings, and he may pick-up his things, and be off at a moment's notice.

But this does not tell what chupatties are. Fancy to yourself a piece of brown-bread dough rolled to about a quarter of an inch in thickness, and just warmed through so that the outside is dry—not crisp—and when you know, besides, that these things are about 8 inches in diameter, and perfectly flabby, you can then picture to yourself "chupatties." They are our substitute for bread in the jungle, and it is wonderful how soon one gets accustomed to them, though even a poor person in England would scarcely look at them, much less eat them. They are not unwholesome as you may conclude, for the extreme coarseness of the flour prevents them being so sodden as they would be if made of the finest flour, such as at home is used for bread.

The vegetables cultivated in the garden here are the same as in England, though, perhaps, not so fine. Cauliflower and Broccoli do not grow well, and, indeed, during this hot season, with the thermometer in the shade at 114°, the only kinds of vegetables we can obtain are Potatoes, a native Bean resembling Dwarf Kidney Beans, Vegetable Marrows, Cucumbers, and Melons.

They are all grown with a little bund (bank) round each bed, to retain the water about them with which they are irrigated every day from a well, whence two bullocks are incessantly raising water, which is conducted to the different parts of the garden by small channels on raised banks.

It is a very bad time of the year (May) to write about gardening, but I will give a sketch and fuller details hereafter.—A CIVIL ENGINEER.

ROYAL HORTICULTURAL SOCIETY.

FLORAL COMMITTEE, JULY 1ST.—The following new or rare plants, the names and awards of which were omitted in our last report, were exhibited in the Society's garden in the third and last great Exhibition, for the inspection of the Floral Sub-committee.

Messrs. Veitch & Son sent several new plants. Among them *Bomarea multiflora*, a showy climbing greenhouse perennial—first-class certificate; *Pteris serrulata cristata*, a useful and ornamental Fern, suited for a glass Fern case—first-class certificate; *Acrophorus affinis*, from Borneo, a useful Fern for baskets—second-class certificate; *Cattleya Acland-Loddigesii*, a hybrid Orchid raised by Messrs. Veitch, a very interesting plant, with rose-coloured sepals spotted with crimson—first-class certificate; *Dictyogramma japonica*, a Japanese Fern with fronds from 2 to 3 feet long—first-class certificate; *Ligustrum foliis variegatis*, a dwarf shrub with pale yellow variegated foliage—commended; *Asplenium consimile*, a Chilean Fern—commended.

Mr. Frost, gardener to Lady Grenville, Dropmore, sent a hybrid *Statice Frostii*, an ornamental plant with richly coloured flowers—second-class certificate.

Mr. Bull, Chelsea, exhibited *Ouvirandra fenestralis*, a rare aquatic plant with net-like foliage, and producing a forked spike of small white flowers—commended; *Araucaria Rulei*, seedlings of a new Caledonian Conifer—second-class certificate.

Messrs. Backhouse & Son, York, exhibited many specimens of their valuable collection of Ferns, among them *Trichomanes scandens*, a beautiful West-Indian Fern, remarkable for its drooping fronds—first-class certificate; *Xyrenophyllum valvatum*, another drooping Fern—first-class certificate; *Trichomanes Kaulfussii*—second-class certificate; *Lindsaea stricta*, a pale green Fern resembling a Maiden-hair—commended; *Trichomanes alatum*—commended; *Trichomanes floribundum*—commended; *Adiantum Clisibrogthii*, a very handsome and ornamental Maiden-hair. Messrs. Backhouse also received a special certificate for their very valuable and rare collection of Ferns.

Rev. J. G. C. Fussell, the Chantry, Frome, sent a very superb specimen of *Gymnogramma chrysophylla*, a seedling from the Golden Fern—commended; also *Llavea cordata*, a fine Fern, but rarely exhibited—special certificate.

Mr. Standish, Bagshot, sent several new plants, among them *Quercus* species with curiously-developed foliage—commended; *Asplenium elegantulum*, an elegant dwarf Fern, which appears hardy and suitable for the Fern case—

first-class certificate; *Selaginella involvens*, very beautiful, forming a distinct compact plant, and producing its bright green branches round a centre—second-class certificate; *Woodsia polystichoides Veitchii*, a dwarf Japanese Fern, very distinct from all other *Woodsias*—second-class certificate; *Funkia* species, a pretty herbaceous perennial, bearing drooping French-white flowers—second-class certificate; *Quercus* species, a fine broad-leaved Oak—second-class certificate.

Mr. Watson, gardener to C. Leach, Esq., Clapham, sent *Disa grandiflora superba*, a decided improvement upon the *Disa grandiflora* exhibited in 1861, the colour being much brighter and deeper: hence its additional title *superba*—second-class certificate.

Messrs. E. G. Henderson, Wellington Road, had a very distinctly-variegated *Primula sinensis*, with deep green foliage, strongly marked with yellowish stripes—commended.

Messrs. A. Henderson, Pine Apple Place, had *Gardenia florida variegata*, leaves boldly margined with pale yellow; a Japanese plant—commended.

FLORAL COMMITTEE, JULY 7TH.—A Meeting of this Committee was held in the right-hand upper terrace of the conservatory this day.

Mr. Keynes, Salisbury, sent two boxes containing thirty varieties of new Roses. A more magnificent collection was never exhibited; they were shown in threes, and for size and brilliancy of colour could not be surpassed. The Society's special certificate was awarded to the collection. The names of some of the most striking may interest the admirers of this queen of flowers. Among them we noticed—*Olivier Delhomme*, *Madame Boutin*, *Vulcan*, *Charles Lefebvre* (a first-rate flower), *Beauty of Waltham*, *Robert Fortune*, *Genevieve Bourdillon*, *François Lacharme* (first-rate flower), *John Hopper*, *Madame Clemence Joigneaux* (a very superior Rose), *Souvenir de Lady Eardley*, *Madame Julie Daran*, *Achevéque de Paris*, *Turenne*, *Souvenir de Comte Carour*, *Maréchal Vaillant*, and *Monte Christo*.

Mr. Perry, Birmingham, sent a very excellent stand of twenty-four *Verbenas*, among which were some good seedlings which received the special certificate. A seedling, *Mauve Queen*, a delicate lavender-coloured flower, was commended. Should this variety bear the sun's scorching rays it will be a most useful bedding plant. Among other good seedlings were—*Purity*, deep bright rose, clear eye; *Rubens*, good form, deep crimson, white eye; *Motley*, deep rose; *Monarch*; and *Startler*.

In the collection of twenty-four varieties, we noticed—*Black Prince*, *Lord Elgin*, *Reine des Fleurs*, *L'Avenir de Ballent*, *Foxhunter*, *Colossus*, and *Lord Leigh*, the three brightest and largest-trussing scarlets. On this occasion *Foxhunter* was decidedly the best scarlet exhibited, and a variety which should be extensively cultivated.

While noticing the *Verbenas*, we must here mention that the Committee this day withdrew the first-class certificate granted 1862, to a *Verbena* named *Rugby Hero*, it proving to be on careful examination identical with *L'Avenir de Ballent*.

Messrs. Veitch sent *Selaginella involvens*, and *Selaginella involvens variegata*, both of which received first-class certificates. From the same nursery came three pots of *Lilium auratum*, one plant with the flower-stems bearing three flowers each.

Mr. Melville exhibited a seedling *Nemophila auriculæflora*, one of the dark chocolate varieties with a distinct white border—commended.

A seedling *Verbena*, *Princess of Wales*, a striped variety, was requested to be seen again, one imperfect truss only being sent. This was a promising flower.

FRUIT COMMITTEE, JULY 8TH.—A meeting of the Committee was held at the garden at Chiswick, Mr. Edmonds in the chair. Mr. Archibald Fowler, gardener to Lord Dalrymple, Castle Kennedy, N.B., sent fruit of a large white Fig, which appeared to be *Large White Genoa*. Mr. Cookson, Lenton Furs, Nottingham, sent a seedling Strawberry of the Sir Harry class, which was of good flavour and large size; but not sufficiently superior to those in cultivation to require any special notice.

The Committee then proceeded to examine the Vines in pots in the forcing-pits, and noted the following:—*Chasselas de Florence*, a form of *Royal Muscadine*, which sometimes

produces berries with a tinge of red on them, but in other respects it does not differ materially from the old variety. Chasselas Imperiale Précoce proved to be Prolific Sweetwater. A variety sent to the garden by Mr. Veitch, of Chelsea, and marked K, was found to be a remarkably fine early Grape, a fortnight earlier than the Royal Muscadine, and of a rich sugary flavour. It was recommended for further trial. Chasselas de Montauban was proved to be the same as Prolific Sweetwater; Minestra is the same as Frankenthal; Muscat de Clermont is Chasselas Violet; La Bruxelloise is Frankenthal; Madeleine Royale is the same as Chasselas Royal. These being all the varieties at present ripe, there the labours of the Committee ended. We would call the attention of our readers to this collection of Vines in pots, which is well worth seeing, and which reflects great credit on Mr. Eyles and his able aid, Mr. Barron.

WORK FOR THE WEEK.

KITCHEN GARDEN.

PLY the fork frequently amongst the growing crops, and continue to manure. Trench-up every piece of ground as it becomes vacant, and plant it with Cauliflower, Broccoli, and Winter Greens. Cabbages, get ready a patch of ground for the sowings of this crop to stand the winter. The soil to be of a light sandy nature, and not too rich, as it encourages a luxuriant growth which is apt to make them more susceptible of injury from frost. In Coleworts make a sowing for the main spring crop. Capsicums, the plants to be kept watered during dry weather, and if mulched with a little litter they will not require it so often. Neglect of watering or mulching them now is frequently the cause of their not fruiting sufficiently early to ripen; they receive but little attention, and, consequently, they do not begin to grow till the autumn rains set in. Celery, the earliest-planted will now require to be gone over, and stripped of their small lower leaves and side shoots; the trenches to be then thoroughly soaked with water previous to the plants being earthed-up, which should take place as soon as the plants are quite dry. Prepare trenches for a late crop. Carrots, thin the late-sown crops, and loosen the earth between them where they have been sown in drills. Dwarf Kidney Beans, a last sowing to be made in a sheltered situation; the drills to be watered if the soil is very dry. Endive, plant-out finally the strongest from the early sowings, and sow also more for late crops; the small Green-curved is best. Onions, pull-up the crop of autumn-sowing, lay them in rows with the roots turned to the sun, and frequently turn them until the stalks are withered, when they will be fit for storing. As they are very liable to decay if bruised they should not be thrown about roughly, but handled carefully, and spread out thinly—not laid in heaps. Lettuces, sow more, and keep up a good succession of Radishes and Salads. Spinach, a good breadth sown now in rich soil will afford many successive pickings in the autumn, and tend materially to save the winter beds from being picked before they become strong. Tomatoes, they require frequent attention to cause them to ripen their fruit; the shoots to be thinned, and those left to be closely nailed to the wall; to be well watered, and then mulched.

When planting Celery, Endive, or any other culinary vegetable, it is unnecessary to deprive them of any portion of their leaves—indeed, the deprivation is injurious, which may be proved by trying both methods. Allow no waste of spare or bursted Cabbages, Greens, Cauliflower leaves and stumps, Bean or Pea-haulm, or, indeed, any other garden article, but give them to the pigs, if any are kept; and if not, they should at all times be trenched at once into the soil as manure, to assist in producing the crops which they are well calculated for, as it is, to some extent, returning to the soil what has been taken from it, together with what has been obtained from the atmosphere. This is a most beneficial and natural mode of applying assistance to succeeding crops. Continue to dredge the young Turnips, Cabbages, and other seedling plants with dry charred dust or wood ashes while damp early in the morning. Also continue to keep a watchful eye on the caterpillars that infest the Gooseberry, as they often make great havoc about the time the fruit is fully grown.

FLOWER GARDEN.

Attention will be well bestowed at this time upon bedded-out plants, deficiencies to be made up, decayed blossoms to be removed from Roses, and the young wood cleansed from insects. Continue to propagate Pinks, Pansies, and Picotees. Bud Roses, mow and roll lawns, and follow up assiduously the extirpation of weeds. Cover the blooms of Carnations and Picotees as they expand, placing cardboard collars beneath them. Layering may be commenced, beginning with the grass or shoots which are most forward. Look to Dahlias, thin-out where required, stake, tie, mulch, &c.

FRUIT GARDEN.

Espalier Apples and Pears to have their leaders tied-in, the superfluous spurred. Attend also to choice Apples and Pears planted in the open quarters, but not trained. Remove superfluous shoots, and tie downwards the points of some of the strongest shoots to counteract their luxuriant growth. Attend to the stopping and nailing of wall trees in general. Remove all runners from Strawberries not required for making fresh plantations.

GREENHOUSE AND CONSERVATORY.

Attend to the greenhouse plants now placed out of doors. See that worms do not effect an entry into the pots, and attend to the routine of tying, stopping, and other details. The season has now arrived when those hardwooded specimens which require a second shift this season must have it without delay, at least before the end of the month, so that the pots become well stocked with roots before the autumn. Be guided in shifting by the strength of the plants. If growing robustly a liberal shift to be given; but if not, a smaller one must suffice. All plants which have done blooming to be cut-in, preparatory to starting for new growth; the decayed flowers and seed-pods to be removed before they exhaust the energies of the plants by perfecting their seeds. Many of the stove plants in some places will be now occupying these houses while the regular tenants are in the open air; but as many greenhouse plants, such as Eriostemons, Boronias of various kinds, and other New Holland plants require the assistance of a little heat to insure their making a good growth, they may be kept in the house with the stove plants, regulating the temperature so as to be agreeable to all the inmates. Keep a moist atmosphere, especially towards the evening, and shut up for an hour or two about the time the sun leaves the house.

STOVE.

As many of the principal plants of this house will now be in the conservatory or greenhouse, advantage to be taken of their absence to encourage the others for winter-blooming, especially such as Justicias, Begonias, Aphelandras, Eranthemums, Clerodendrons, Rondeletia speciosa, Luculia gratissima, Torenia asiatica, Pentas carnea, &c. A batch of Achimenes picta and Gesnera zebrina to be started for the same purpose. Maintain a moist growing atmosphere with plenty of air, and guard against insects. Where a house or pit cannot be devoted to the Azaleas this will be a suitable situation for them, but they are better by themselves.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

MUCH as last week. Made the most of the little water we could command to keep Peas, Beans, Lettuces, Turnips, growing and crisp, and shading a little to break the force of the sun's rays. Watered Cauliflowers, except what was nearly fit for use. Earthed-up the forwardest succession, leaving a hollow along the middle for future waterings, and earthed-up chiefly to keep the water we gave round the roots. Instead of taking the remains of the Cauliflowers to the rubbish-heap as usual, will most likely strip off all the leaves, and lay them along the sides of the advancing crops, to shade the ground and keep the moisture in.

Never have we witnessed such glorious weather for securing the haycrops in first-rate condition; and notwithstanding the drought, Turnips that are pretty forward in the fields are looking well. All cereals that we have noticed, with the exception perhaps of a little patchy Barley, are from their beautiful appearance enough to fill every heart with gratitude. It is only in gardens, where the water

supply is a very serious consideration, that such glorious days and bright suns bring with them any feeling of anxiety and alarm. This great water question has for a long time been like a coil of ropes round our legs, impeding freedom of action. If a bit of envy should ever enter and find a short resting-place in our mind, it would be from seeing a garden where water in abundance was ever present, and where, by the mere placing a pipe on a tap, quarters of Strawberries and vegetables might be flooded at will. There can hardly be a comparison made between such a place and another in which water must be dribbled out as if it were wine. The practical deduction to draw would be the importance of securing such water-supply for the site of a garden, and the imprudence of fixing on the top of a hill for a garden, and especially if there was much done in the way of bedding plants, the water to be depended on being merely that which can be caught from the atmosphere.

We are rather pleased than otherwise that the hint the other week about landlords building cottages and leaving the tenants to scour the ditches and dirty pools by the highway for water has so far told. Entering into particulars is out of the question. Kindly intentioned improvement—not bitter acrimonious criticism or exposure—will ever be our motto and practice in such matters. We are well aware of what one correspondent tells us, “that many landlords would be horrified at such a state of things, which exists solely from their ignorance of the matter, and from no want of kindly sympathy.” Then would it not be good policy to try in a quiet way to dispel that ignorance? Philosophers may debate, and never settle, how far, if at all, human character is moulded by mere circumstances. Simple observation tells us that there are men of such strength of determination as to rise superior to all circumstances of position, however seemingly unfavourable. With the mass of us common folks circumstances exert a most powerful influence. Look at that little girl, who, with the instinctive love of the beautiful so largely inherited by woman, is as much or more pleased with her pretty new frock than the belle of the ball-room is with her satin and pearls. Would she be so likely to roll in the dust and the mud (though children may do much worse), as if clothed with a ragged garment, so dirty that it would require a microscope to speak of its colours? We could instance the wonderful transformations, even in outside appearances, effected by moving a family from a tumble-down rickety homestead, and settling them in a nice cottage, on the conditions that cottage and garden were to be kept clean, and the latter well cultivated. Even in such a cottage, however, a woman's attempts at cleanliness and honest respectability of position, must be greatly neutralised if she must hunt the ditches to get even a little of muddy water. If a few more landlords would inquire into such matters for themselves, we would be delighted.

SURFACE-STIRRING.

The general reader will, we trust, excuse the above digression as to pure water for cottages. The want of plenty of water in the garden has caused us to resort to many makeshifts. Surface-stirring is one of the most generally applicable. From several notes received there seem to be much doubt and darkness still existing on the subject. One lady tells us that her plants are dying, that the ground is very hard on the surface and is cracking in many places, and that she imagines that if she slightly forked over her ground she would be still worse off, as the heated air would penetrate and dry up her soil more and more, until the roots could find no moisture to nourish them. The dry hard-baked surface of many a border and bed is sufficient evidence that such an idea is very general. It is, however, based on a thorough fallacy. Here, however, let us note that an excess of luxuriant growth and an excess of fruitfulness are two very distinct things. To secure great fruitfulness at the expense of diminished growth the soil can scarcely be too firm, either at the surface or anywhere else. To secure rapid growth the soil should be more loose, and the surface open enough to receive the air and its oxygen. Thus, to secure a dwarf standard or pyramidal Apple tree, we must resort to means somewhat different from those we should adopt for securing a very large head of Cauliflower. In the first case we should have what firmness we could, with much mulching or more moving of the surface as would

prevent cracking, and in the second we would have deeper than surface-stirrings of the soil in order that air should get to the roots, that the roots themselves might be multiplied, and thus the organs increased for sucking up the rich waterings presented to them. We have often seen a piece of ground in Cabbages that had become case-hardened in April or earlier wonderfully improved in its appearance in twenty-four hours merely from deep surface-stirring, say 3 or 4 or more inches deep—a very different thing as respects roots and air from mere surface-scratching with a Dutch hoe, &c., though that, too, has its uses and advantages. By such means the air is admitted, to effect mechanical and chemical combinations with the materials in the soil; but the great effect upon the Cabbages is not produced so much by letting heat in and moisture out as our correspondent, by her reasoning, might suppose, as by quite contrary means—namely, the keeping the moisture in and the heat out.

On this principle, when we wish to get a mass of soil as much heated as possible by the sun's rays, we would have the soil firm and the exposed surface smooth and level rather than rough. Hence, when we have wished to obtain very early Cauliflower under hand-glasses, we have kept the surface of the soil rather smooth and firm in early spring, that the great stimulus of heat should get down to the roots, and then as the leaves began to shade the ground and we could receive little help from direct absorption and conduction of sun heat, we have then stirred the soil for the purposes already stated. All this we should do on the simple principle that, as a general rule, bodies absorb, conduct, and radiate heat in proportion to their density. Thus, if we place a two-foot rod of seasoned wood in the fire, we may hold the end of the rod without feeling any inconvenience until the flame of the burning wood comes too near to us; but if we place a similar bar of iron in the fire, the end which we grasp would soon be too hot for us. In such an experiment the wood should be old and seasoned. We recollect long ago, when burning a piece of green wet Ash and holding it by the end, it got so hot that we thought we had discovered some unknown heat-conducting power in the Ash; but we had done nothing of the kind—the moisture in the wood was heated by the fire, and was thus forced through the pores and vessels of the wood, just as steam or hot water rises from a boiler.

We come, then, to two conclusions—first, that firm soil is by absorption and conduction sooner and more highly heated by the sun, and just so much sooner cooled by radiation of heat when the atmosphere is colder than the ground, than a loose open soil would be; and, therefore, surface-stirring arrests extra heat from the sun during the day, and lessens the loss of heat by radiation at night; and secondly, as the loss of moisture by evaporation is in proportion to the heat applied, then the looser the surface the less the amount of moisture raised by evaporation. Those who still doubt as to the first, may satisfy themselves by burying two thermometers that indicate alike—say 1½ inch from the surface—the one in loose soil and the other in very firm soil, the soil in both cases being of the same consistence as to dryness, and examining both at 5 p.m. after a sunny day. We will be surprised if that under the firm soil do not show the higher temperature. After a dull day and a clear night we should expect it to stand the lower of the two in the early morning.

We satisfied ourselves as to the second in a very simple manner. We took two good-sized bell-glasses with rounded conical, not flat tops, because we wished the vapour raised during the day not to drop from the top when condensed, but to run down the sides. The bottom of each glass was then fitted into a lead gutter, formed of the material often used for the small squares of cottage windows, but which we trust will be soon superseded for that purpose by cheap glass. These two glasses with their troughs were set, one on firm ground and the other on moved ground, but as much alike as possible in other circumstances, and both full in the sun, care being taken by earth and putty outside that neither air nor vapour should enter the glasses from without, so that whatever moisture was found within in a morning must have been entirely owing to the heat of the sun raising it as vapour from the ground enclosed. The results were very varied; but when the glasses were examined early before the next morning's sun had time to vaporise

the condensed moisture trickling down the sides, the general fact arrived at was, that the trough in which the glass stood over the solid ground had most water in it. The same results we believe would take place in every garden and field according to their relative circumstances. True, on stirring soil with fork or share, the heat of the air would enter, and in proportion to the dryness of the air, would the soil be deprived of superabundant moisture, and other chemical and mechanical advantages would follow; but the heat admitted would almost entirely be the heat of the air near the surface of the ground, and not that accumulated heat from the sun's rays striking repeatedly on the same solid spot. In the first case, too, the conduction of heat downwards is arrested by the open surface; in the second it is assisted. The surface-stirring acts, therefore, in both cases very much like the shade of a thick mat spread over the ground. Putting a cold hand successively on iron, stone, firm smooth earth, and loose earth exposed to the sun's action, would almost decide the matter by the mere sense of touch.

The strongest argument a friend suggested against such conclusions was gained from the well-known fact, that tender fruit trees against houses and cottages often fared better than in gentlemen's gardens, even though they scarcely ever had any waterings, and the ground above the roots was either paved or pitched. How did the roots get moisture at all if the heat of the soil and the evaporation from the soil were so much in proportion to the firmness of the surface? We think the case on the other hand is quite in our favour. The earth being close to the paved surface got more heated in spring than a common garden border would do, and thus roots would be stimulated in unison with branches. So little is this the case in general with trees against walls at the back of cropped borders, that it is quite common to shade the wall in early spring, or to leave the twigs dangling from the wall, and thus keep them colder than they otherwise would be until the earth would get a little heated. A vast deal has been written on concreted bottom of borders; but we believe much might also be done by concreting the surface as soon as the trees were established. Then as to the moisture question, there need be little fear of that if the roots are not wholly isolated from the surrounding earth. We cannot say how far a good healthy plant will draw moisture for itself in such circumstances, but the greater the evaporation, the greater the quantity attracted to supply it. We once had a Vine-border that could not receive from above a drop of water for five years, and yet on uncovering it, it was found to be just nicely and healthily moist. The leaves were less, and the fruit more abundant every year; and on taking up the pavement over the roots of fruit trees trained against a cottage, we have generally found the soil nicely moist though not wet. This is, however, another side of the question—fruitfulness v. luxuriance. The principle fairly understood, we can easily vary it, just as we would bring such knowledge to bear very differently on two young Cabbage plants, one of which it was desired to bloom as soon as possible, and the other to become in the shortest time a great thumping head to fill the tray at the hall table.

ORNAMENTAL GARDENING.

We skip other departments to continue the practical illustration of the same principle. In addition to much of what was stated last week we knived part of the lawn where there were some Daisies, in preference to mowing, as it is not desirable in such warm weather to make the grass too short. The chief work, however, has been regulating beds and borders, hoeing or surface-stirring, watering what we could, and then almost immediately covering with a slight layer of leaf mould and old Mushroom-dung. Generally we used to pass all such material through a one-inch sieve, and then add to it a little soot and lime before strewing it over the bed, as these latter ingredients tend to keep the beautiful birds scratching it about over the lawn, and this they can hardly attempt when the beds are too thick for their bills and shoulders. This year, being scarce, we have been obliged to use leaves of this season rather too rough for the back rows, and our old mixture for the front rows and all the smaller beds. Now, though we consider this covering from half an inch to an

inch or more as a capital thing when rightly used, the right use depends much on the time and the season. Scarcity of water has made us resort to it sooner than we otherwise would have done, when a still warmer soil would have done no harm, whilst the great heat would have prompted us to thus mulch some things sooner than we did. We shall now for some time be pretty independent of the water-pail as respects those beds thus managed. Rougher things, such as Dahlias, have had a dressing of short mowings, and without any watering they are standing well.

As examples are best remembered we will single out two classes of favourite bedding plants, and show how the same principle would apply to them somewhat differently. First, there are the Scarlet Geraniums. We believe the summer can scarcely be too bright and warm to insure their doing first-rate out of doors. In a dull summer and wet autumn they are more prolific of leaves than flowers. So much is this the case, that in such circumstances, and but for the expense, planting in pots, would be best—in fact, treating them like the tree with its roots under pavement. So well convinced are we that these plants like a warm soil, that we would stir the surface but little, and would not mulch at all but for the dread of the plants being dried up. As our ground is poor, half an inch or so of the compost just helps to prolong enough of vigour for flowering, and keeps the moisture in. Then, secondly, there are the *Caleolarias*, which are now so beautiful, and which, in our opinion, require quite different treatment. These plants will often do well in a dull cold season, when Scarlet Geraniums only pretend to mass with bloom; but we have never known the brightest and longest-continued sunny weather have any other effect on them except to make them brighter, provided the roots are kept cool and moist. Neglect these provisos, and we will not say much as to the results we would anticipate in such circumstances: hence in their case we early and frequently stir with hoe and fork the surface soil, and this is likely all we would do if we could water them often with cold water; but as we cannot do so, and as by mid-summer the soil is generally warm enough for them, we give them a mulching of the riddled Mushroom-dung and leaf mould, and would give them more than 2 inches instead of 1 if we could afford it; and in hot dry weather such as this we make a boy just move the surface of this covering, which thus breaks the line of conduction and of evaporation, and so helps to keep heat and moisture in, on the same principle that we defend ourselves from too bright a fire when seated near it by placing a firescreen between it and our bodies.

We are very short of this mulching after clearing out all our Mushroom-beds—for the first piece in the open shed is now too much covered with Mushrooms. However, as there were only a couple of inches or so of good stuff on the surface, if the bed continues long thus prolific we shall be agreeably disappointed, and have taken measures for succession accordingly.

Our chief fresh work in the fruit garden has been layering more than a thousand Strawberry plants in small pots, as mentioned a fortnight ago.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

BURNING SURFACE SOIL (*G. H. W.*).—In No. 96 of this Journal are full directions for paring and burning. Buy "Manures for the Many," just published at our office; you can have it free by post for four postage stamps, and it contains the same directions.

DESTROYING WOODLICE (W. T. Suffolk).—Wrap a little hay loosely round a baked potato, and place it at the bottom of a flower-pot. Lay the pot so baited on its side near your Ferns, and every morning shake the woodlice out of the hay and off the potato into boiling water. Repeat the potato in the hay, &c., and continue to do so until the pest is exterminated. A much simpler plan for ladies and gentlemen is to cut a raw potato in two equal parts: scoop out the cut part a little with the knife, and then placing the half-potatoes, with the cut or hollow side downwards by the side of the eaten Ferns on the soil or sandstone. Every morning treat the woodlice to a boiling bath: you will find them secreted under the potato and adhering to it in the hollow. This is so clean a plan that any amateur gardener can adopt it. The potatoes will last well for a twelvemonth, but not in frosty weather. As your Ferns are so much eaten examine the plants after dark with a lantern, and you will, not improbably, find some slugs at work; if so, pick them off into a flower-pot, and sprinkle some salt over them; or if you have any ducks they will thank you for the present unsalted. A few fresh cabbage leaves will enable you to catch hundreds of slugs if the leaves are placed near their haunts, and are examined every morning.

LAPSTONE KIDNEY POTATO (A Nine-years Subscriber).—We think it ought to be shown in the class for late Kidney Potatoes.

BEST EIGHTEEN PENTSTEMONS (S. S. S.).—Admiral Lincol, Brilliant, Charles Watson, Cocoon Magnifica, Cyrus, Flora, Dr. Hogg, Illuminator, Jans, Léon Kern, Purple Prince, Scarlet Gem, Sultan, John Salter, Tynningham, Rose of England, Carl Appellus, Albicane.

BEST EIGHTEEN PHLOXES (Ibid).—Boule de Nègre, Comte Vigier, Eblouissant, Flore, Hébé, La Candeur, Le Vésuve, Liervalli, Madame Liervall, Madame Van Houtte, Mdle. Anais Aubert, Ne Plus Ultra, Madame Standish, Souvenir de Mons. Fries Morel, Surpasse Madame Rendatier, Triomphe de Twickel, Vanna, and Mr. Rollisson.

SIX NEW AND GOOD GLOXINIAS (Ibid).—Bird of Paradise, Cornelia variegata, Lady Diana Beauclerc, Lady Feodore Wellesley, Leviathan, and Most Beautiful.

HARDY HERBACEOUS PLANTS (C. H. S.).—You can obtain plants of the less common from any of the florists who advertise in our Journal. Write to them for a catalogue and you can select for yourself.

SPECIMENS OF PLANTS (A. B. C.).—No letter accompanied them, so they were thrown away.

FERNS IN WARDIAN CASE (T. E. Dublin).—Too much light and too little ventilation will make the fronds turn brown. Our Fern case never has the sun shining upon it, and has the sides partly open all the day and night.

SEEDLING PANSIES (Dr. C. Stuart).—Of those sent Midnight seems to be the best (we say seems, for they were so dry it was hardly possible to accurately judge them). It is very dark; and if it have a good habit, as you state, for bedding, it will make a valuable addition to those we already possess. In sending flowers avoid wadding. A tin box with camp blotting-paper (or one on Mr. Mellan's plan), should be used.

AMARYLLIS LONGIFLORA ROSA FAILING (Pond-dhu).—The warm heat of a plant-stove or cucumber-frame ought to have brought out the blossoms of your Amaryllis, as they generally expand well enough when they are warmed. The offset you mention will not bloom this season probably, but by being well ripened will perhaps do so another year. Be sure and let it have a good long rest, rather cool than otherwise; and though it ought to be kept dry, a too great extreme in this is not to be recommended.

ACHRETTIA PURPUREA EDGING (J. B.).—Seedling plants of this may be planted any time during the summer, or slips of older plants may be put in during showery weather; but it is better to put them into some shady place to strike and then plant them out. Old plants, however, yield rooted layers or offsets, which do very well. As an edging, it looks best when its overhangs and grows amongst stones; but it may be grown near a grass verge, in which case about 10 inches will not be too far off, if you allow it to attain a good size afterwards.

PEARS DECAYING ON THE TREE (K. W.).—It is no unusual thing for Pears that have been attacked by an insect while in the bloom to swell to a certain size and then fall off, but we never knew the whole crop to be so affected. It would be advisable in your case to examine the diseased fruit, and see if there be any insect in them to account for the premature decay. Many Apples, and Pears too, drop shortly before arriving at maturity in consequence of an insect which has either burrowed into their side, or its larva being deposited while it was in bloom, and it advances with the fruit. There is no preventive to this, but there are generally sufficient left unharmed for a crop. Write us again if yours all drop at a certain size. Some kinds we know are addicted to this in unfavourable seasons. It seems as if the conditions necessary to bring the fruit to perfection were not in existence at the time, and the tree refused its support to them and decay ensued. We have seen a tree of Williams' Bon Chrétien so affected, but it is not at all a common occurrence; such a general failure often is caused by a parasitic fungus.

HUMUL ELBOANS NAKED AT BOTTOM (Boudy).—The cold winds in May were one of the causes of this plant losing so much of its foliage, as we have plants 10 feet high with the same fault; but as they are flowering well at top we must not object to their naked bottom. We have, however, surrounded the base of our plants with tall-growing things, as Chrysanthemum regium plenum, tall Lobelias, African Marigolds, and the like; and another season we may very likely plant a Maurandia along with the Humea. Do not by any means cut it down.

HYBRID PERPETUAL ROSES ON THEIR OWN ROOTS (E. G. E.).—In favourable situations most of the ordinary kinds will do pretty well in a bed, but some that we have tried did not succeed. Of those which do best we may name Caroline de Sansal, Baronne Prevost, Baronne Halex, Géant des Batilles, Jules Margottin, Souvenir de la Reine d'Angleterre, Madame Rivers, Paul Ricaut, Général Jacqueminot, Madame Hardy, and William Joss. Others might be added, but we prefer limiting our remarks to such as we have found do best. We are, however, promised an article on the subject from one of our contributors.

GREEN SLIME IN AQUARIUM (E. D. S.).—The only mode of prevention is by changing the water frequently. We have a syphon, and change the water of one in a drawing-room daily. The "whitish powder" on your stones is the mildew (Oldum Tucker), and will destroy them if you do not cut them and the leaves thoroughly with flowers of sulphur.

HEATING A SMALL CONSERVATORY (A. L. B.).—No stove without a pipe or chimney ought to be admitted among plants—it slowly destroys them. We had such a small conservatory once, and we heated it by a gas stove, but with a pipe to carry off the fumes resulting from the combustion of the gas.

ROSES FOR FORCING (Idem).—The following are good for the purpose. *Hybrid Perpetuals*.—Baronne Prevost, Dr. Marx, Géant des Batilles, Jacques Lahtie, Reine des Fleurs, and William Jesse. *Tea-scented*.—Abriote, Comte de Paris, Devonensis, Niphetos, Safrano, and Vicomtesse de Cases.

SEEDLING STRAWBERRY (J. Cookson, Lenton Furs, Nottingham).—Your seedling Princess Alexandra is a large dark-coloured Strawberry of the character of Sir Harry, and does not supersede that variety in any of its points. We therefore think, notwithstanding its great merit, that it is not desirable to increase the varieties allowed in cultivation by adding this one to them.

VARIETIES (F. B. F.).—A zinc case kept filled with hot water would hasten the germination of seeds. Its top should be covered with sand, and the seed-pans plunged in it. We could not say whether the flower you name is a Carnation or Picotee, not having either an inspection or description of it. Guano and superphosphate of lime would enable you to grow kitchen-garden crops without other manure.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

ISLINGTON AGRICULTURAL HALL POULTRY SHOW.

HAVING seen a communication from the authorities of the Crystal Palace stating they had discontinued holding poultry shows and offering to sell to the Agricultural Hall Company the pens used at their Shows, I was asked my opinion of holding a poultry show in connection with a flower, fruit and vegetable show to take place in the last week in August. Knowing the decision come to, or as every one would suppose, had been come to, after offering to sell the pens used at the Show at the Palace, I advised a poultry, pigeon and rabbit show to be held in connection with the flower show at the Agricultural Hall, Islington, and this was sanctioned by the Finance Committee and liberty given to offer a very liberal prize list. We then go to the Crystal Palace on the 28th June and are asked by the head official to buy the pens, knowing the Agricultural Hall Company had in contemplation holding poultry shows.

This I beg of you to lay before the poultry exhibitors, as I am highly compromised by the recent announcements of the Crystal Palace Company. It was neither the intention nor spirit of the Agricultural Hall Company to commence an opposition to the Crystal Palace Show; but they were induced to adopt a poultry show through my representations, and my object was for the benefit of poultry, pigeon and rabbit breeders.

After having been informed by letter from the Crystal Palace Company, and by word of mouth from its official, who I concluded was authorised to sell the pens, now they state that a rumour has prevailed that the Show was to be discontinued, but that no such decision was ever arrived at.

After offering to sell their poultry pens it seemed as if poultry-breeders would be left without a summer show for chickens; and as the Agricultural Hall Company kindly took the Show up, it will be to the interest of all breeders to support their proposed poultry Show. I now leave it in the hands of exhibitors to say whether I was justified in doing as I have done.—JOHN DOUGLAS.

WHEN EGGS SAT UPON ARE UNHURT BY BEING CHILLED.

I NOTICED in your Journal the inquiry relative to eggs being sat upon and then chilled. The following is my experience of two cases similar to that of the inquirer.

Some years since I placed fourteen eggs (Golden-spangled Hamburgs) under a Game hen about ten o'clock on the Saturday night. She seemed to sit close, but the following morning I found the hen off at six o'clock. I gave her food and water, but could not induce her to notice the nest again for some hours. I removed the eggs and gave them to her at 8 o'clock on the following Monday morning, not thinking to have a chicken; yet at the expiration of three weeks she brought me fourteen beautiful birds. This year I placed fourteen eggs of Golden-spangled Hamburg under a hen on Thursday night, April 23rd, about nine o'clock. She sat close till eight o'clock on the following morning,

she then came from the nest. I gave her water and food and she returned to the nest, remaining on until ten o'clock. She then deserted the eggs until four o'clock in the afternoon, when she came to the nest and laid, and then sat with a good will. On the following Monday morning about eight o'clock I placed under her the same eggs she sat on before. This time I was full of confidence, and should be

again, for she hatched thirteen beautiful chickens, they are doing well.

I should not object to sit a hen on eggs that had sat upon more than twenty-four hours, for I am of that vitality does not commence until after that have a friend who has had a similar case this season the eggs yielded chickens.—T. MAY.

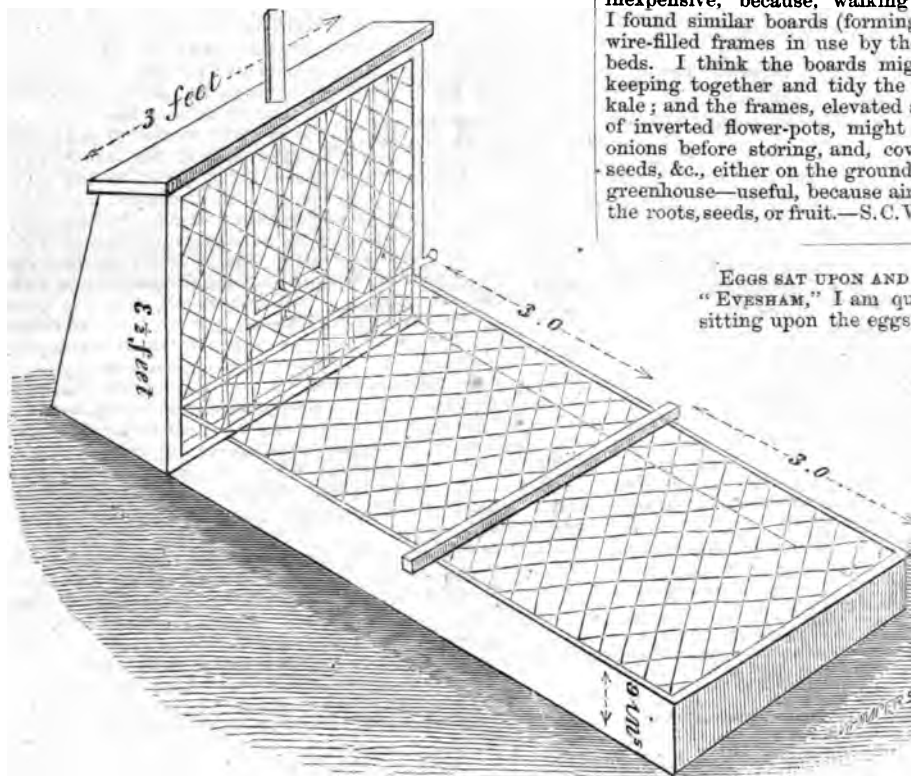
HEN-AND-CHICKENS COOP.

I HAVE had coops for chickens made of many different kinds, but all cumbersome to move and stow away in the winter, and occupying much room. Lately, at a neighbour's I saw some which I think excellent, and am induced to send the particulars.

The coop is made without a bottom, to be placed in an orchard, &c., as may be convenient, and two (one inverted) can be stowed away in a loft compactly. Next, the enclosure is formed of two boards placed edgewise, with a shorter one at the end, fastened at the corner, and attached to the coop by small wire hooks, hooking into wire staples.

Then there are three deal frames filled in with gauze netting, two lying horizontally on the boards the enclosure and one standing upright against the the coop, and just retained there by similar hook those spoken of before. Pretty enough did the chick running about beneath the wire. The hen was in 1 and the sliding-bar let down.

Now, the advantages I conceive to be these chickens are restrained from wandering into the wet grass, and their food is protected from the sun and themselves from cats, and the whole is comparatively inexpensive, because, walking over the kitchen I found similar boards (forming the enclosure) and wire-filled frames in use by the gardener to protect beds. I think the boards might also be found keeping together and tidy the covering put over kale; and the frames, elevated at the four corners by inverted flower-pots, might be found useful for onions before storing, and, covered with paper, for seeds, &c., either on the ground or on the front stage greenhouse—useful, because air would be admitted the roots, seeds, or fruit.—S. C. W., Bromley, Kent.



EGGS SAT UPON AND THEN CHILLED.—In "EVESHAM," I am quite convinced that sitting upon the eggs for only seven hours not possible cause of the added. I have similar exp and have t eggs from after sitting twenty-four and at the week or ei I have aga them unde and the re eleven chic of fifteen tried this t cessive tin Dorkings, C Cochins, tl being the WESTMORE

LOSS OF QUEENS—PROCEEDINGS OF BEES PRIOR TO SWARMING.

EVENTS proved the correctness of your verdict in page 464 of the last volume, that the queen ejected from my storified-hive on the 25th of May was the mother of the hive. She must, however, have been assassinated by her subjects, as twelve days elapsed before the commencement of piping, and it was not until the thirteenth or fourteenth day after her expulsion that the bees attempted to swarm. It seems that even a fertile queen is exposed to some risk when hives are transposed, as the following will prove:—On the 20th of May I made a small swarm by placing two frames of brood (one of them containing a nearly mature royal cell), and two frames of empty comb into a four-frame nucleus-box; and on the 16th of June, finding that the young queen had laid a considerable quantity of eggs, and that the combs were well filled with brood, I determined to shift the four frames with their queen into a full-sized ten-frame hive, and transpose them - the last swarm of May 9, which was

becoming so crowded that I apprehended a maid would shortly issue forth if not prevented.

The operation was quite successful as far as the were concerned, very little fighting taking place, the following morning I found the young queen dead in the hive. Happening to have a very fine Italian my unicomb-hive, I caught her and carefully introduced to the queenless hive, as recommended by "B." placed her with only two of her subjects under a glass, and putting them over the aperture in the board, with a slip of perforated zinc to regulate the mission of bees from below, slowly and cautiously the bees to ascend. Finding them all well disposed than two hours I withdrew the slide entirely, and with a considerable number of bees which had been to ascend, speedily disappeared between the frames and the interior of the hive a few hours after

was pleased to find the queen at liberty receiving the adoration of her new subjects.

The bees in the unicomb-hive made four royal cells, and I had for the first time an opportunity of witnessing the conduct of the senior princess and also that of the workers previous to the issue of a second swarm. The queen at liberty constantly attempted to reach the royal cells containing the imprisoned queens, and frequently got quite to one of the cells, but the workers would then seize her by the leg and chase her until she was several inches from the forbidden territory; they then appeared to rather fawn upon and caress her. A swarm issued forth on the eighteenth day from the abstraction of the old queen. I also observed that the aperture in the royal cells containing the imprisoned queens was not small, as I should have inferred from Dr. Bevan, but the end of the cell was entirely nibbled away long before the queen gained her liberty.

After the departure of the swarm the hive appeared almost depopulated, but a small knot of bees still kept vigilant watch over the imprisoned queens, and I did not see the elected one at liberty until the morning of the 7th inst., twenty days after the loss of the old one. The first young queen was very dark and not at all visibly different from an English queen, but I am glad to see that the one now regnant is very well marked and a most decided Italian, and may turn out a first-rate queen.—J. E. B.

[The instance above related tallies with our own experience, that strange bees cannot be introduced into any stock, either by transposing or by any other means, without considerable danger to the queen regnant.]

VARIATIONS IN THE COLOUR OF QUEENS AND DRONES.

I MUST dissent from the conclusion arrived at in the editorial reply to "A HAMPSHIRE BEE-KEEPER," in page 20, since it appears to me by no means certain, but, on the contrary, highly improbable, that the so-called yellow-banded queen possesses the slightest trace of Ligurian blood. Had the old queen met a Ligurian drone as suggested, the fact would have been made evident to the most superficial observer by hundreds of her worker progeny displaying the peculiar orange-coloured belt which adorns the Italians, instead of its being apparent only in the person of her successor. The truth is these variations in colour occur more often than is generally supposed. I have probably handled and examined more queen bees, both English and Italian, than any other Englishman, and have several times met with those of the former species whose annulated appearance perfectly corresponded with the one described by "A HAMPSHIRE BEE-KEEPER," but which had not the slightest claim to affinity with the Italian race; whilst, on the other hand, I have seen pure Italians that scarcely differed in outward appearance from the ordinary black queens. Nor is this variation confined to the females; it has already been stated in these columns that pure Ligurian drones are frequently very dark, but I have only recently become aware that drones of the ordinary species may simulate the appearance of Italians. This has, however, been the case in a recent instance in which, whilst destroying the few drones which existed in a second swarm of common bees that I had purchased, I was astonished at finding some among them as distinctly marked as any of my best Ligurians. What rendered this more remarkable was the fact that neither the queen-mother herself nor any of her worker offspring participated in the slightest degree in the gay colours which distinguished their male relatives.—A DEVONSHIRE BEE-KEEPER.

AGE OF QUEENS—BEE SEASON IN SOUTH DURHAM.

I OBSERVE in No. 117 that "A LANARKSHIRE BEE-KEEPER" states that he had a queen for "seven years." Would he kindly say if this is what he wrote, or is it a misprint?

I am glad to say the weather in this part (South Durham) since the 9th of June has been very fine and good for bees, and should it continue a few weeks more I do not think there will be any occasion to take them to the moors.

I think there can be no doubt that the Ligurians are much superior to the common ones. I had a swarm from one of mine in a common straw hive on the 21st of June, and this swarm swarmed again on the 1st July; a half-bred swarm, hived into one of Tegetmeier's observatory-hives, filled it with comb, honey, and grub in twelve or fourteen days, and I have been obliged to put two glasses on, to give them air at top and bottom, and destroy the queen-cells to prevent them swarming in twenty-one days from the day of hiving. I cannot say from experience that the hybrids are equal to the pure Ligurians, but they appear to be superior to the common bees; and this season I find both the hybrids and Ligurians as tame as I ever found the common bees. To preserve them pure you must keep them at a distance from one another, and I have, therefore, moved my hybrids four miles away.—A. W.

APIARIAN NOTES FROM GLOUCESTERSHIRE.

I CANNOT give a very favourable report of the bee-season from this county. The spring was too dry and too cold for honey-gathering. The first swarm I heard of in this neighbourhood was on the 18th May. The second was on the 28th from one of my own old stocks; but breeding has gone on well with the help of occasional feeding. The honey-gathering has been delayed until this time (the 18th June), in consequence of the want of that fine electric weather which often takes place the last fourteen days in May. There are only now about from fourteen to twenty days left for honey-gathering; but the grass is later than usual, and we have no heath and little Dutch clover. In July and August the bees have a bad chance, excepting in heath countries, and where the Dutch clover abounds in July and August, and even latter in some localities. Yesterday (the 19th June) and to-day, incessant rain from N.E. and North.

As I do not admire artificial swarms, I cling to the old-fashioned natural, and, as Virgil describes it, that "Divine instinct" which teaches the bees to increase their number in their own way, which, to my mind, is one of the most wonderful, and by far the most exciting act which these extraordinary insects perform.

Your correspondent from Durham seems to make a shrewd guess that the cold easterly winds in May render the flowers and blossoms nearly useless to the bees. In 1848 we had twenty-nine days of easterly wind, and little or no honey was gathered in that month. The late districts have certainly a chance of faring better this summer, and I have always been of opinion that July and August will be finer and drier than in any of the three preceding seasons.

The exhibition of bees and hives at the meeting of the Bath and West of England Agricultural Show amused me very much, and I was pleased to observe that Mr. Woodbury's hives were greatly admired at the Show, and that his "live stock" made such a "buzz" in the newspapers. It was very agreeable news also to hear that his Ligurian bees had arrived safe, and had been so much admired in Australia. The latter I consider a great feat accomplished, as it is well known that in a voyage of probably more than ninety days, the greatest care must have been taken of those bees to insure success.

I omitted to mention that I hived a second swarm on the 12th, which had hung under a thick shrub all night in the rain. They were very weak, and I gave them some honey; they are now working most vigorously in one of Nutt's old-fashioned boxes.

The last two days I have had a first swarm (from one of last year) swarm no less than four times; and yesterday (the 17th), no less than twice on the same day, and each time the swarm returned to the parent hive, after half-settling twice on an artichoke plant, and twice on a young pear tree; not the same tree each time. I fear they will not issue out again, as rain has set in.

I can say, certainly, that for half a century I do not remember four consecutive seasons so bad as the past three, including the present, to be ranked almost as unpropitious as any one of the three, so many stocks having been ruined by the cold weather in the spring.

The twelve days' rain from the 5th to the 17th of June caused great distress to many young swarms. In 1849 (then living at Thornbury Park), I lost three stocks

of bees from sheer want, and, of course, inattention. It had been nearly incessant rain for twenty-six days.

Many swarms perished, or became much reduced, by the rains this month (June).

I am glad that the little useful publication "Bee-keeping for the Many" is coming out with additions and improvements. It would be well, as I have often said, that such a book as "Hive-making for the Many" should issue also. It would be pleasing to see cheap bar-hives and Payne's improved cottage-hives with supers and glasses on sale at such prices as would suit the poor cottager. Take the country in general, how few of the farmers, leaving cottagers out of the category, have adopted any of the novelties in hives so often described in THE JOURNAL OF HORTICULTURE? In the town of Cheltenham with 40,000 inhabitants, none except the everlasting old-fashioned straw hive is to be seen for sale at any of the hive-shops.

M. Dzierzon's remarks on feeding bees seemed very practical. The bees should only be fed when it is needed, and to those who are watchful over bees, it will soon be discovered when that happens. At the same time, in feeding weak stocks in the autumn against winter, it should be done plentifully, according to their wants and weight.

June 22.—My third swarm came off yesterday (after six times issuing forth), and was hived at one o'clock. Weather cloudy, drizzly, and unsettled, but a warmer temperature, and brood rising.—H. W. NEWMAN, Hillside, Cheltenham.

LIGURIAN BEES IN AUSTRALIA.

I AM indebted to Mr. Edward Wilson, President of the Acclimatisation Society of Victoria, for the perusal of various reports from the Australian Apian Society, and journals kept by the gentlemen to whose care the Ligurians were entrusted upon their arrival in Australia, from which I glean the following interesting particulars.

Mr. Sayce, President of the Apian Society, writing under date of the 23rd March says, "It may now be fairly stated that the Ligurian queen bee is a more prolific insect than that with which we have been so long familiar; and I do not hesitate to say that the industry exhibited by these bees is unapproachable by that—great as it is—which characterises the others; or perhaps I should speak more correctly were I to say that the Ligurian bee is a more puissant insect, and that this, added to a most extraordinary gift of scent, which enables it to discover the existence of honey however remote or hidden its receptacle, gives it a superiority in the collection of food. I have also observed that its labours are less interfered with by the weather; for during the recent rains, except when very stormy, the bees went out and returned laden with their stores, apparently quite unconscious or indifferent to the existence of anything which could occasion them inconvenience or discomfort."

Mr. H. Templeton, of George Street, Fitzroy, gives most interesting details in his diary respecting the management of the Ligurian stock entrusted to his care. The bees were shut up by me on the 22nd of September, and underwent a confinement of seventy-nine days, as appears by Mr. Templeton's diary commencing on the 10th December, when he states he "received a hive of Ligurian bees, the property of the Acclimatisation Society, which upon examination proved to be in a most wretched condition, the inner surface of the hive bearing testimony to the great distress which the swarm had endured on the voyage. Found about three quarts of dead bees in the empty box placed under the hive for the purpose of ventilation, which I at once removed. On examining the comb I discovered a few living bees—not more than a large tea-cup might contain, and many of these in a sickly dying state. Left these to gain a little strength before further troubling them." Two days afterwards Mr. Templeton says he "took out the frames containing the combs one by one in order more fully to ascertain their true state. Found on both sides of one comb and on one side of the combs adjoining on each side of it, a number of fine-looking bees, by this time much revived, each having an orange belt round the upper part of the abdomen, and yellow rings distinctly marked back to the point. Discovered the queen—a fine large yellow one—actively running about on the centre comb occupied by the living bees, evidently enjoying excellent health." In two days more fresh-

laid eggs were discovered in three of the combs. From this time all went well. Three stocks of common bees were at different times united to the Ligurians, and with such skill and good fortune were these junctions effected that no fighting took place. Copious feeding was also resorted to, and under the influence of this stimulus a number of drone eggs were laid. Queen-rearing and the formation of artificial swarms were next attempted with similar success; and under date of March 23rd Mr. Templeton says, "The young queens are come to maturity, and are out of the cells. I have supplied two common hives with Ligurians queens, and have, therefore, four hives, two of which I know to be all right, and the two others are hopeful." In a continuation of the journal it is remarked that "the quantity of brood deposited by the two young queens is most astonishing;" and under the date of April 3rd Mr. Templeton says, "I examined a few frames, and found the old queen not only lively and well, but carrying on the breeding as vigorously as ever. Were I to state the number of eggs that that queen has laid since the 10th December last—viz, sixteen weeks, it would appear quite fabulous; no bee-keeper will believe it until he sees them—it is more than double the number a common queen could produce in the same time."

The diary ends on the 11th April, before which time the writer announces his possession of four royal cells, which being from the brood of a young queen would produce grand-daughters of the old queen that came from England. He also states that he has twelve stocks in frame-hives, of which four have yet to be supplied with Ligurian queens.

It may be remembered that the first venture was made with four stocks. All reached Australia alive, although with greatly reduced numbers; but one I believe afterwards deserted its hive. Of the remaining two, the one under the care of Mr. Sayce, the President, has well filled its hive with honey, and the other under the care of Mr. M'Millan has formed a strong stock.—A DEVONSHIRE BEE-KEEPER.

BEE SEASON IN HAMPSHIRE.

THANKS for your acknowledgment of my letter. I think if there was a Ligurian hive within reasonable distance of my abode I should have heard of it. I will make more diligent inquiry—it may serve to measure the flight of bees.

We have between us made a mistake as to the number of years I have been a bee-keeper. I began in 1838, a most unfortunate time as regarded the north. I do not remember that we had a good bee year till 1842, and as I tried "no end" of experiments my disasters would fill a book. As I grew older I grew wiser; and of late years few have had more honey than I have taken. Yorkshire is a very good county for bees. They breed more, make a great deal more comb; and of course when a season is propitious three or four stone is nothing to boast of; indeed, some of those from the moors will weigh on their return "well on" to six stone. The hives are so small in Hunts and the Isle of Axholme that you could not work with them in Yorkshire, and *vice versa*. Having only been two seasons in Hampshire I judge more from the size of the hives I see in the cottagers' gardens than from actual experience.

This year the season is so good that few of my neighbours can reap the harvest they ought; and in trying remedies by cutting the tops out of old hives to make "grafts" they are making many "mulls;" and this would seem to show that grafts, or "ekes" as we called them in Yorkshire, are not much in use here.

I have not seen my striped beauty since I wrote. Her subjects began drone-killing just then, and I expect her guards may have kept her out of harm's way. Now the back window is deserted. The bees are very few in number, but they have killed all their drones, are carrying pollen, and are very pugnacious, from which I gather that she is alive and well.—A HAMPSHIRE BEE-KEEPER.

OUR LETTER BOX.

SHEFFIELD POULTRY SHOW.—The prize birds single Spanish cock, Carrier Pigeon cock, and variety Pigeons belong, we said, to Mr. Smith of Sheffield but that gentleman lives at Walsall.

PIGEONS (A Subscriber).—Write to Mr. Tegetmeier, Muswell Hill, London, N., and ask his advice.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	JULY 21—27, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
21	Tu	Sun's declin. 20° 32' N.	73.2	51.0	62.1	15	9 4	3 af 8	16 a 10	41 af 9	6	m. 5	262
22	W	Carrot flowers.	73.5	51.8	62.7	20	10 4	2 8	26 11	0 10	7	6 8	263
23	Th	Corn Parsley flowers.	74.2	53.0	63.6	18	12 4	1 8	36 0	27 10	8	6 10	264
24	F	Virgin's Bower flowers.	72.5	52.3	62.3	13	13 4	vii.	49 1	37 10	9	6 12	265
25	S	St. James. Ds. CAMBORN, 1797.	73.7	50.0	61.8	10	15 4	58 7	3 3	37 11	10	6 13	266
26	Sun	8 SUNDAY AFTER TRINITY.	73.1	51.1	62.1	18	16 4	57 7	13 4	morn.	11	6 14	267
27	M	Water Dropwort flowers.	74.5	52.3	63.3	17	17 4	55 7	17 5	28 0	12	6 14	268

From observations taken near London during the last thirty-six years, the average day temperature of the week is 73.5°, and its night temperature 51.6°. The greatest heat was 92°, on the 26th, 1844; and the lowest cold, 34°, on the 25th, 1860. The greatest fall of rain was 1.37 inch.

CENTAUREA RAGUSINA AND ITS PROPAGATION.



SEVERAL years ago I ventured to bring this lovely plant under the special notice of all who were interested in flower-gardening, as a subject which was every way likely to be of great value in combination with the far-too-limited collection of plants which are generally considered available under the present fashionable style of flower-gardening.

The high opinion which I formed of this *Centaurea* whenever I saw a well-grown plant of it has not been in the least altered, but, on the contrary, has been more than warranted by the beautiful effects which have been produced by its extensive cultivation in several flower gardens, as well as by its general cultivation in pots for all the various methods of decoration which are popular at the present time; but it unfortunately happens to be a plant with which the trade has not been very successful in getting up a stock equal to the demand which has arisen for it.

I think it was Mr. Robson who recently referred to it as a plant which was likely to be much more thought of and extensively used as soon as its adaptability became better known; and the wonder is that it has not before now been brought more prominently before the public, and popularised by the great schools in such matters around London, where I was surprised to meet with so little of it last summer. It is considered, and has been found even by some of the sharpest of the trade in such matters, a difficult subject to increase rapidly; and in instances which have come under my own ken some nursery propagators have failed with great batches of cuttings; and partly on this account I have heard it several times remarked, that any one who could have offered a large stock might have made "a good thing" of it. I have never found any difficulty in striking this plant under ordinary circumstances; and I will briefly detail the mode adopted, and refer to the way in which it has been used in the flower garden here. Let it be supposed that a few plants in pots are all the stock in possession at this time. If strong stubby plants in six-inch pots, they are shifted and placed in the open air in the full sun. By the time when plants are generally housed in autumn they will have formed fine, large, bushy plants; and although this *Centaurea* is almost if not quite hardy, it should not be left out beyond the 1st of October, because, if subjected to drenching rains, its soft woody foliage is apt to damp-off at the centres of the plants. To keep it in the best possible condition to

afford fine fresh cuttings in spring, it requires to be kept on a dry airy shelf, and to be very sparingly supplied with water—just sufficient to keep it from drooping is quite enough, for it is a plant very apt to damp-off in winter if kept damp and crowded among other plants. In spring they are found with a quantity of cuttings studded all round the bottom part of the plants; and if these cuttings are short and without a bit of clear stem about a couple of inches in length, the plants are put into heat, and there the cuttings soon elongate, and are cut off with a sharp knife almost close to the main stem of the plant. They are prepared in the usual manner and dibbed into eight-inch pots, which are very carefully drained and filled with silver sand. The pots are plunged to the rim in a pit where *Verbenas* and other bedding plants are struck. They are watered just sufficiently often to keep them from drooping, and the foliage kept as dry as possible. They root in about twenty days; and as soon as they form roots about an inch in length they are potted-off into three-inch pots.

I have always observed that they never thrive well if left any length of time in a strong heat and in pure sand before being potted-off. They are by no means particular as to soil: half loam half leaf mould does very well. As soon as they make roots to the bottom of the three-inch pots they are transferred into six-inch ones and placed in a cool frame or house, and by the end of April they are fine strong plants ready for planting out. The first week in March is quite early enough to take the first batch of cuttings; and soon after the first lot are taken from round the lower part of the parent plants, the second lot will be ready for striking. Those cuttings with the longest and most firm stems invariably strike the soonest, and a far less per-centage of them damp off in the cutting-frame than in the case of those that are short and softer in the stem.

It is a very rapid-growing plant, and cuttings may be struck as late as the end of April for the purpose of being planted in the open ground. Later-struck cuttings form beautiful little plants in six-inch pots for dinner-table decoration, as well as for vases and general decoration.

There is another method which I have adopted with less success—namely, to put in cuttings in autumn, and place them in pans and boxes in a dry, cool, airy house; in this way a great many will callus through the winter, and with a gentle bottom heat in spring will root freely. This is just as is often practised with late-put-in cuttings of *Scarlet Geraniums*, and meets with very nearly the same success. I prefer spring propagation, it being more certain, and the trouble and care entailed are less than by adopting the other mode. I have never found autumn cuttings put into bottom heat immediately do much good, but on the cool system the majority of the cuttings do very well.

To keep up a stock I think it much the best way to keep a few plants all the summer in pots—they come in useful for many other purposes, and to take cuttings from the planted-out plants sadly mars their appearance, while, on the other hand, to lift the old plants is a laborious

affair, as they form such immense bushes; and unless potted-up earlier than they can be spared from the flower garden, they require much more room and care than can be afforded them in quantity, and except under very favourable circumstances they do not bear the lifting well.

Three years ago I planted out upwards of four hundred plants; and one of the most effective and novel combinations I ever saw was *Centaurea* and *Perilla* plant for plant. The bed was a diamond bed, forming the centre of a cluster of beds on grass. It was raised to a cone 5 feet above the level of the turf. I well remember being severely found fault with by some fair critics when the bed was newly planted. The surface was paved over with blue bullet-like stones from the shore, and it certainly looked odd; but by the time the stones were all hid, those who had most severely criticised the bed had begged a thousand pardons for their mistake. The *Perilla*, of course, was the taller by a few inches, and, viewed from the distance, it was considered the best imitation of rockwork. The same season another bed was planted with blue *Lobelia*, and then the *Centaurea* dotted all over it, so as to leave a ground of blue running among the feathery foliage of the *Centaurea*.

When *Lobelia speciosa* has been used for groundwork in panel-borders, a single plant of *Centaurea* has been used for the panels; the blue and it form a very chaste and pleasing combination, and the two plants are thoroughly distinct in character. This year it is used for panels alternately with *Christine Geranium* where the groundwork is *Lobelia* speckled thinly with *Gazania splendens*. In another wide border it is planted in the centre of panels of *Purple King Verbena* where the groundwork is a deep scarlet. The *Centaurea* is raised quite above the level of the panel of purple; and even at this date the effect is very pleasing, and will be more so as the purple fills fully up and becomes more massive. Raised in the same manner it forms a beautiful centre to a cone of *Scarlet Geraniums*. In one instance or two it has been surrounded with a circle of *Christine* in the centre of *Tom Thumb*. As a vase plant edged with *Lobelia* it is most lovely. It also looks well in vases edged with dwarf *Scarlet Geraniums*.

As a plant for placing in gold vases on the dinner table it is most acceptable, and stands such work well—in fact, this is one of the most useful plants of the day. It would be a great step in the right direction if it were possible to plant over flower gardens to a larger extent with plants diverse from and more picturesque in character than the everlasting and monotonous masses and lines of *Geraniums*, *Calceolarias*, and *Verbenas*; and this want is being more largely acknowledged every year, and the more so as taste becomes more refined and alive to the fact that beauty consists not alone in gaudy colours, however strikingly in contrast or nicely harmonised. DAVID THOMSON.

TETRATHECA VERTICILLATA CULTURE.

IN answer to "J. M." we reply that the plant is rightly named. Full directions for culture were given in a previous volume. It requires when young to be grown chiefly in sandy peat, well drained, and never allowed to become very dry. It also requires a temperature of from 45° to 48° in winter, with a due proportion of air; and in summer, if the top is fully exposed to the sun, the pot should be sheltered by plunging or shading, or placing in a double pot, as, if the pot is fully exposed, the roots are apt to be injured. It generally blooms most freely in early spring and summer; and that gives, as it were, the keynote to its culture. Left to itself, it soon becomes weak and rambling; and therefore, to secure anything like compactness, rather free pruning must be resorted to when the plant has nearly finished blooming, taking care, however, not to cut farther back than the current year's wood, as it breaks badly from older wood.

After pruning, keep the plant rather dry, cool, and quiet until there are signs of breaking; then put in a cold pit or other place; and, with the exception of giving more air, treat the plant as to syringings, &c., much the same as was recommended the other week for *Epacris*. As the young shoots grow more air must be given; and if in fine days in September the plant should be exposed to the sun fully, the more ripened and short-jointed will the wood be, and

the more covered will it ultimately be with bloom. What potting the plant requires should be given when the young shoots are about 2 inches in length. After that repotting watering should be done very carefully, so as not to saturate the new soil, slight syringing and shading being resorted to in preference until the roots are working in the fresh soil. As the plant gets large, and an eight-inch or larger pot may be necessary, fibry sweet loam in the proportion of a third or so may be added to the peat, along with some pebbles, broken pots, and nodules of charcoal to keep the soil open.

Cuttings of the points of the shoots will strike at any time, but the best cuttings are thinnings of the young shoots about 2 inches long formed after the regular pruning. For these a small pot—say a small 60, should be three-parts filled with drainage with a slight covering of rough peat and sand, and a surfacing of half an inch of pure silver sand. Place the cuttings round the sides of the pot, the heads of the cuttings pointing inwards. Water well, and then place the small pot inside of a five or six-inch pot, stuff between with moss, cover with sand, and in the space between the two pots place firmly a bell-glass with a conical head, and set anywhere so as to command a temperature of from 50° to 60°, and where shade can be given when necessary with a piece of paper over the glass.

The cuttings, with the glass down, will stand a good deal of sun morning and evening. If kept too close and shaded they will draw very spindly and weak. To neutralise that, and also prevent the cuttings damping, move the glass a little at night, and as soon as the cuttings callus freely take it off altogether at night, if there is no likelihood of the tender cuttings being dried from being placed near a heating medium. To prevent damping on the one hand and drying up on the other, it will be found preferable to keep the place round the cuttings moist, and even to water the space between the two pots instead of watering the little pot in which the cuttings are placed. We have not grown the plant lately; but, by the above mode, we have found every cutting strike and grow freely. In potting-off we first placed four round the sides of a small 60-pot, using chiefly sandy peat with a little charcoal about the size of bird-shot, watered, kept close, and shaded from bright sun until they were growing freely and each plant was forming a nice little mass of roots, when each of the four plants received a single pot.

The plants were frequently stopped by pinching-out the points, and brought under the general routine of management. In potting place the drainage as directed the other week, so that wherever the plant is placed worms cannot get in from beneath, as the plant will not thrive with worms about the roots; and, though they may be dislodged with clear lime water, we always found the plant disliked such applications, or even hard well water of any kind. If rain water cannot be had, and spring water must be applied, it should stand in the sun twenty-four hours before being used.—R. F.

GRAPES AND MELONS FAILING.

THE Grapes in my hothouse I perceive are drying-off; their appearance a few days ago was luxuriant. I have been speaking to a gardener about it, and he says my head man gives them no longer any water, contending that, the Grapes having swelled, the Vines should be dried-off. Common sense, one would think, indicates a totally different plan; for when the plant requires the greatest nourishment, then the greatest moisture should be administered. This is my theory. Am I right?

From precisely the same cause, I think, my Melons are good for nothing, and not bigger than a cricket-ball. My man may be right: if he is, it strikes me as the greatest anomaly in nature. Another thing I should mention in regard to the Melons—the vines run all over the frames, and would get out if they could. Does not this exhaust the plant?—E. B.

[We feel that it is a very delicate matter to pronounce upon the fitness of a certain treatment, when it is a matter of dispute between a gentleman and his gardener, when the data given are necessarily so meagre. When Grapes are dead ripe it is often advisable to keep the borders rather

dry, as a little excess of moisture is apt to cause the berries to crack. If the Grapes were merely swelled, not ripe, then extreme dryness would be apt to make them shrivel and dry up. As they seemed so luxuriant a few days ago, we could not be positive that this was the cause, unless assured that the roots were dry. In such weather they might soon become so, if the roots were shallow, and no mulching or watering given. If the roots were moderately deep, we should be inclined to judge that dryness at the roots was not the reason; but to assign it to a very dry and hot atmosphere inside. As a general rule, however, we should never think of "drying-off" the Vines until the fruit was not only ripe but mostly cut. When fully ripe, we would not deluge the border, but we should rather wish it to be dry until the fruit was pretty well gone. A good theory may become a nuisance and a mischief when too hard driven. In such dry burning weather, even if Grapes are ripening, a little moisture in the house from syringing walls, stages, floors, &c., will prevent shrivelling and drying. In cold, dull weather, such treatment would help the berries to crack and rot. If the Grapes are merely swelled, not ripe, watering at the roots if dry will be all in their favour, and just a moist condition in opposition to dust dry should be the state of the roots until most of the fruit is cut. Even then some tender kinds are easily influenced by a moist or very dry atmosphere. In moist, muggy weather, therefore, it may be advisable to put a little fire on and give plenty of air; and in very dry weather it may be just as necessary slightly to damp the atmosphere of the house, by syringing floor, paths, &c.

We fear that there may have been something of the same extreme as respects the Melons, only the extra luxuriance makes us doubt a little. If there was a good depth of soil, and that was well saturated after the Melons took hold, and the surface stirred afterwards, we have frequently had fine crops of Melons that never again were visited by water. These were cases in which the heat was more important than moisture, and when we knew there was plenty of moisture to swell and ripen the Melons. In general cases, Melons just require as much water as most other plants—quite as much as the Cucumber, until the ripening process approaches. If there is an exception, it is the importance of having a dry atmosphere when the plants are in bloom. That is best secured by having the surface of the bed dry then. Of course, if the soil, as a whole, were dry, we should not expect the fruit to set, and if set, we should not expect them to swell. When the swelling commences we like the soil to be moist. If the weather is unfavourable, and a moist surface would cool the place too much, then we would moisten the bulk of the soil, and leave the surface dry. In fine sunny weather there will be no harm in watering the bed in the usual way. A dry surface is essential for flavour, if the fruit is ripened in dung-frames; but the soil containing the bulk of the roots should not then be dust dry, and neither should it be deluged. Except when it is setting and ripening its fruit, the Melon needs as much moisture as a Cucumber, and not a great deal less than a Cabbage. It is only as the fruit approaches maturity that the extreme of dryness is a matter of importance. When plants are grown in pots, or in narrow beds, and trained to a trellis, and the fruit suspended under the foliage, but considerably above and free from the bed, then even surface dryness of the soil is a matter of less importance for securing flavour. In all cases where the fruit is merely swelling, we should consider a very dry state of the soil unsuitable, and calculated to ripen the fruit prematurely before it had gained half its usual size.

The slight doubt as to this extreme of dryness we find in the "another thing," as to the vines being so luxuriant and trying to get outside, the frames being full of them. This is hardly compatible with extreme dryness of soil, unless, indeed, the roots have gone in search after moisture beyond the soil, and are revelling unchecked in rich rotten dung, or something of that kind. In such a case the plant will not become exhausted—quite the reverse; but it will most likely be a very successful instance of luxuriance *versus* fruitfulness. Such luxuriance of vine speaks of the plant *wanting*, but then it also speaks of want of concentration for a definite purpose—namely, fruit. Leave such luxuriance unchecked, and the plant in its eagerness to grow and

expand may forget all about the fruit that needs elaborated sap to swell it and give it flavour. When a plant in a frame is thus a thicket of shoots, more than half the foliage is uninfluenced by the sun, and, therefore, hurtful rather than otherwise. If not curtailed, it would be a good thing for the plant if the frame were raised, and the Vines allowed to go outside. Melons dislike cutting and slashing. The best mode is to disbud at first, and pinch merely afterwards. In such a case as we presume the present to be, a severe cutting and thinning would do more harm than good. The check given to the mere growth would act on the fruit, and very likely arrest its swelling. Shorten all the shoots of the small fry at once by merely picking-out their points, which will thus give a gentle check to mere growth of wood, so that the fruit may have the benefit of the nourishment which would otherwise have been appropriated to the production of wood, and then take a little foliage away day by day, until at last there are few leaves that cannot be fully exposed to the light and air when you give it. If there is plenty of heat, leave a little air at the top of the frame all night, and give as needed during the day. If thus kept cool at night, the plant will rejoice rather than otherwise in a high temperature during the day. But for the enervating influence of a high close temperature at night, there would be less trouble with airing and shading during hot sunshine.

Such are a few random ideas, the results of some experience; but we by no means think they will clear up thoroughly the difference as to opinion between "E. B." and his gardener. If they help to do so, or to establish the principle that one system may be very good, if thoroughly carried out, whilst two good separate systems if blended and mixed will often produce mischief and failure, we will be more than satisfied. Without understanding the system on which a man works, it is not an easy matter to say that his practice is wrong. Nothing could seem more different than watering Melon plants only at planting time, and watering on an average, say, once or twice a-week, and yet precisely similar results may be obtained in both cases by a little diversity of detail. Only this much we may say, that the man who strikes out a fresh path for himself whilst in the service of another, must make up his mind that he must also secure pretty fair success. Many a servant has lost a good master because, right or wrong, he would have his own way. Many a master has lost a good servant because he would not exercise a little forbearance.]

STRAWBERRY-GROWING.

I CAN from experience safely recommend "H. C. K.'s" mode of mulching Strawberry plants with a liberal quantity of horse-droppings; but I cannot bear out his assertion that it is possible by this treatment to keep "one piece of ground under Strawberries for sixteen years without the slightest loss of either quality or quantity." As he speaks from experience, will he kindly inform your readers more clearly if he means that he has had for sixteen years good crops from the same old crowns, without renewing the beds with fresh plants? Surely he can hardly mean this, for it is against all recognised theory or practice. His system, if correct, will be a perfect blessing to the host of amateurs, who with their odd man or boy have to rack their wits how to renew their Strawberry-plots every three or four years.

Whilst on this topic I venture to say that I have accidentally found that the waste fibre from the cocoa mat and brush factories is an excellent protection for the ripening Strawberries instead of straw or grass. It keeps the fruit clean and dry, does not harbour vermin, and with care lasts many years. It was sent to me by mistake for the potting fibre; but it is now the right thing in the right place.—W. X. W.

PROTECTING STRAWBERRIES FROM SLUGS—COTONEASTER MICROPHYLLA.—Some of your correspondents have been inquiring how to protect Strawberries from slugs. I am much tormented with them, and have found dry sawdust from my sawmill a complete safeguard. In addition to the uses lately mentioned for the *Cotoneaster microphylla* you might suggest the grafting it on Thorn stocks about 4 feet

high, and training it to a round head. It has a beautiful appearance in the autumn. It is the only plant I know which naturally grows towards the north, and, therefore, if planted against a wall with a south aspect will always keep close to it without nailing.—AN IRISH SUBSCRIBER.

NOTES ON NOVELTIES AT SAWBRIDGEWORTH.

THANKS to the orchard-house system, we have been enabled to make the acquaintance of several novelties this season which without the aid of such an appliance we might have lived all our days in ignorance of. Whatever may be said for or against orchard-houses depends entirely upon the point of view that the advocates or opponents of those structures view them from. A great deal has been said in our pages lately on both sides, and it cannot be denied but that much ability has been displayed by the writers by the way in which they severally supported their views on this subject. It is not our intention at present to support the views of either party, but simply to record such facts as have come under our own observation, and to take advantage of the new information we have obtained—information we should have despaired of ever having got except for this mode of cultivation.

For some seasons past Mr. Rivers has had in operation a glass structure which he calls a Cherry-house. It is in every respect the same sort of thing as the ordinary orchard-house; but being devoted exclusively to the cultivation of Cherries in pots, he has designated it by this name.

Like ourselves (and, oh! how often have we felt it), Mr. Rivers had felt the disappointment arising from endeavouring to prove new Cherries on trees grown in the open ground. It mattered not how much trouble was taken with them; however skilfully pinched and pruned, or artfully fashioned, they may have been; or however profusely they may have blossomed; if a cruel May frost did not devastate the promised crop, the birds devoured it ere it was half ripe. Years passed on, and no progress in knowledge was made, till in pure desperation the trees were crammed into pots and taken for refuge to the Cherry-house. And well have they repaid the trouble taken with them. The trees are beautiful pyramids 3 to 3½ feet high, and literally studded with fruit of the greatest beauty and finest flavour. We would strongly advise our readers to see them. Among the new varieties we observed as possessing very great merit, and which cannot fail to become permanent in our collections, were the following:—

EARLY RED BIGARREAU (*Bigarreau Rouge de Gouben*).—The fruit is large, about the size of the ordinary Bigarreau, but of a decided heart-shape. The skin is bright red and transparent, like that of Belle de Choisy. The stalk is 1½ inch to an 1¾ long. Flesh firm, rich, sweet, and excellent.

This is a very excellent early Cherry, quite ripe before the old Bigarreau begins to colour. The tree is like a Duke in its habit of growth, but the fruit is so decidedly heart-shaped, and the flesh so firm, that it must be classed among the Bigarreus.

EARLY BLACK BIGARREAU.—This is a fitting companion to the preceding, and ripens at the same time. The fruit is large, distinctly heart-shaped, as large as the Bohemian Black Bigarreau. Skin jet black. Stalk 1½ inch to 1¾ long. Flesh dark purple, firm, richly flavoured, sweet, and excellent.

Mr. Rivers received this from the Continent under the name of Bigarreau à gros fruit couleur de chair, which is evidently a misnomer.

LUDWIG'S BIGARREAU.—Fruit large and perfectly heart-shaped, terminating at the apex in a sharp point, with a slightly marked suture on one side. Skin shining, of a fine bright red colour, which is evenly distributed over the whole surface, except that it is a little paler on the shaded side. Flesh pale yellow, very tender and melting, much more so than Bigarreus generally are. A delicious early Bigarreau, ripening just after the Early Red Bigarreau.

BOHEMIAN BLACK BIGARREAU.—This is a fine large Cherry, of a roundish heart-shape, even and regular in its outline, and flattened a little on one side, where it is marked with a faint suture. Skin jet black and shining. Stalk dark green, remarkably short, being not more than 1½ inch long, stout

and rather deeply depressed. Flesh quite black, firm, but not crackling, juicy, richly flavoured, and delicious.

This is ten days earlier than the common Bigarreau. It is a splendid Cherry.

DROGAN'S BIGARREAU (*Bigarreau Blanc de Drogon*).—This is a very early form of the Bigarreau, being quite shrivelled when that variety is only just ripe. It is perfectly heart-shaped, rather pointed at the apex, and flattened on one side. Skin yellow, mottled and flushed with red on the side that is much exposed. Stalk 1½ inch long, stout. Flesh firm, sweet, and richly flavoured. A very desirable variety.

TRANSPARENT.—This is said to be the result of a cross between Reine Hortense and May Duke, and it has preserved in the form of the fruit that of the latter parent. The fruit is above medium size and oblate, with a bold style-mark on the apex, and with a very faint suture on the side. The skin is thin and transparent, showing through it the netted texture of the flesh, and of a uniform pale red colour all over. Flesh melting, tender, sweet, and delicious. This comes among the Red Dukes, and is allied to Belle de Choisy.

DECHENAUT is another of the Red Duke class. The fruit is large, roundish heart-shaped, broad at the stalk, rather flattened, and marked with a faint suture on one side. Skin bright cornelian red, and shining, becoming darker red when quite ripe. The stalk is 1½ inch to 1¾ long, inserted in a wide and deep depression. Flesh tender and succulent, with the May Duke flavour. This is a fine large Cherry, well worth cultivating.

These were among the most attractive of the new sorts of Cherries. There were many more, some really new and others old friends with new faces, or, rather, with new masks; for the new names under which Mr. Rivers imported them were merely masks to palm-off old sorts, and which but for the orchard-house might have continued undetected for years to come.

We have heard a great deal lately about the difficulty of fruiting Apricots in the orchard-house. There seems none about it at Sawbridgeworth, for in one of the large orchard-houses there are some splendid large trees completely studded with fruit. The whole secret, if secret it is, consists in ramming the soil in the pot when the tree is planted as closely as it is possible to pack it. This soil should consist of tenacious loam and dung, and the surface should be mulched in summer with very rich soluble matters, such as malt-dust and horse-droppings saturated with very strong liquid manure. Among the novelties in this department we observed the two following, which will doubtless prove valuable acquisitions:—

EARLY MOORPARK.—This came from the Continent under the erroneous name of Angoumois Hâtif, which is a totally different thing. The fruit of the Early Moorpark is roundish, inclining to oval, with a very deep suture on one side extending from the base to the apex. Skin yellow, mottled and dotted with crimson on the exposed side. Flesh in all respects resembling that of the Moorpark. Stone oblong, with a covered channel along the back, which is pervious. Kernel bitter. This ripens three weeks before the Moorpark.

SARDINIAN (*De Sardaigne*).—This is a small early Apricot, not much larger than the Red Masculine, but equally as early and much superior in flavour to it. The skin is white, but where exposed to the sun it is spotted with a few crimson spots, and sometimes has a flush of red. The fruit has a deep suture on one side. The flesh is very juicy, with a sprightly sweet flavour, which is very agreeable. The stone is very small, not more than half an inch long, with a covered channel, which is pervious. Kernel bitter.

The tree is a great bearer, and ripens its fruit as early as the Masculine. This season it was ready for use in the orchard-house on the 28th of June.

The pot-fruit-tree culture in this vast establishment is truly marvellous. We observed houses after houses literally crammed with Peaches, Nectarines, Apricots, Plums, Figs, Cherries, and Vines, all in preparation for the winter campaign. One mass of two thousand of the new Victoria Nectarine, which is to be sent out this season, particularly struck us by the health, vigour, and uniformity of their growth, and the neatness with which they had been worked so close to the soil. But there is a new idea Mr. Rivers is about to introduce, and to which he attached our attention.

tion. It is no other than what he calls "Japanese trees"—Apples, Pears, and Plums, or, in fact, any kind of fruit trees, grown in No. 24-pots. There was a lot of them not larger than a decent-sized Geranium laden with fruit, and their dimensions are limited by a constant system of pinching. Judging from what we saw on this occasion, the idea bids fair to become popularised, as they are grown, not under glass, but simply plunged in rows on a bed of dung, leaves, or other fermenting material from which a steady, gentle, genial heat can be obtained. There is no covering whatever required; and those who complain of the constant watering necessary in the houses will have an opportunity under this system of indulging in the amusement of growing pot-plants without so much labour in watering as there is in the house-system.

ROSES.

MESSRS. FRASERS' NURSERY, LEA BRIDGE ROAD.

A visit to this extensive nursery is well repaid at this season of the year. Messrs. Frasers' Roses are now in high condition, and among them are to be found the very best varieties in cultivation. The soil seems particularly adapted to the Rose; and although the time of flowering may be a little later than in other nurseries, the size and colour of the individual flowers cannot be surpassed. Every Rose-grower should visit this collection and make notes of the new and distinct varieties. There is much advantage in purchasing Roses after seeing them in bloom—it prevents that frequent disappointment which attends the purchase made from description.

Messrs. Fraser have also now in bloom a large and interesting collection of Fuchsias. Much is it to be desired that our Fuchsia-growers would pay them a visit at this season. They would learn that the new varieties can make good specimen plants; and if they could only see Comet, Lord Warden, Elegantissima, Marginata, Signora, Hermine, and the double variety True Blue, as grown in this establishment, they would immediately introduce new and excellent kinds into their collections. The amateur who cultivates the Zonale Pelargoniums will find in this nursery some excellent new French varieties, novel in colour and perfect in form. Much is it to be desired that this beautiful class of plants should receive more attention.

Among other interesting plants the Messrs. Fraser have a very large collection of single and double Petunias. These are planted out in a bed, and seem well calculated to be very effective for that purpose. Several of the double varieties are as large as the Rose Baronne Prevost when fully expanded, and some of the striped varieties are exquisite.

Should any person be induced to run down by the Eastern Counties line (making the journey in twenty minutes), let him be sure to ask to see the splendid collection of German Stocks, and he will agree with me that they alone are well worthy of the journey.—X.

HOT-WATER PIPING REQUIRED FOR HEATING A VINERY.

WHAT quantity of pipe will be required to heat a vinery 70 feet long, 14 feet wide, 5 feet high in front, and 12 feet at back? It will be in three divisions, one being for early forcing?—CUMBRISSENSIS.

[Supposing the first house to be 23 feet, for that you will need 140 feet of four-inch piping for early forcing; for the second about 100 feet; and for the third or late house, and to be kept so, about 80 feet. If all the 70 feet were intended for Grapes from July or so, then about 250 feet would do. It is best, however, to err on the side of having enough, as then you might change your houses gradually at any time from late to early. Deficiency of piping just means waste of fuel, and, therefore, is seldom true economy.]

SHOW RANUNCULUSES.—It may be interesting to some of our readers to know the names of a few choice sorts of Ranunculuses that have appeared in successful stands at exhibitions this month. The following notes were made at Oxford and Wallingford of flowers, which well deserve the

cultivation of lovers of this interesting flower. Among edged flowers on white grounds I noted fine specimens of Kilgour's Queen, Liffey, and Herab. Edged on cream or buff grounds, Linden and Terpander. Edged on yellow grounds, Eva, Sir W. Hoste, Delectus, and Festus. Mottled flowers, Melancthon and Coronation. Spotted flowers on yellow grounds, Pertinax. Self-colours, Apollo, Bouquet, Marquis of Hereford, Eliza, and Suranné. Two or three edged varieties of seedlings were produced, but without names, so that there were no means of identification. I understand the promise of vigorous bloom was good in the early part of the season, but the frosts of April and May did much injury.—X.

STUDLEY ROYAL.

(Concluded from page 29.)

Now for the gardens. Introduced by a friend to Mr. Clarke, the clever gardener, I was privileged with a view of his department, for the pleasure grounds form a department of themselves.

The mansion is situated in the outskirts of the park and near to a public road. Although much improved by its present owner, it is not sufficient either in size or architectural beauty to harmonise with the surrounding scenery. The outline of another mansion close by, partly built some years ago, still remains, and is used for a variety of purposes. In front of the mansion a large new garden, or rather series of gardens, in the terraced style, with geometrical beds, some on grass, others on gravel—after the designs of Mr. Thomas, of London—was fast approaching completion. The plans are simple but very chaste, and harmonise well. The parts are not so intricate as in many of a like kind, nor so toy-like as the polychrome figures or parterres at the Royal Horticultural Gardens. The finished part of the garden was very effectively planted, and the plants being large, showed the various edgings, ribbons, and masses well considering the earliness of the season (June 6th). In company with Mr. Clarke I made for the kitchen garden, and in the chat by the way I found he is one who looks on all the brotherhood of Flora as friends. Being a perfect stranger I had no idea of putting on paper what I saw; but, what with the kind reception and the known celebrity of the place, I became bold enough to jot down a few things seen and heard.

The kitchen garden is situated some distance from the mansion, and is separated from the park by a low wall. It is divided into several compartments by walls, and appears to have been made at different periods. The principal garden, however, is a parallelogram, divided into quarters in the usual way, and the walks are bordered with fruit trees. It was well stocked with vegetables, and the beds of Asparagus, though very old, bear well. The north wall of this garden is covered with fine Peach trees loaded with fruit, testifying that there is no necessity for an orchard-house, even in the north, to secure good Peaches. There is more fruit on one of these trees than in any orchard-house I have ever entered. The leaves of the trees, however, were somewhat scorched, as if some caustic solution had been applied to them; and, what was most remarkable, no insect had, I was informed, infested them; consequently no solution likely to cause the leaves to blister and wither had been used. In other respects the trees were very fine.

At one end of the garden is a double row of pits, formerly Pine-pits, heated by hot water and dung-linings, but now used for plants, furnishing cut flowers in winter and plants for decorative purposes, besides bedding plants, &c. Mr. Clarke speaks highly of Una and Beaulieu Geraniums as furnishing early blooms for cutting.

Another pit, considerably below the level of the ground, is planted with Vines, which apparently are very old, but they annually produce good crops.

In an adjoining house were some very fine Cucumbers of a variety named Scott's Superb, and, whether a local or old variety, it certainly is not in general cultivation. It is not a very abundant bearer, but moderately handsome and large, hanging a long time without turning yellow, besides being a good winter-fruited variety. The house in which it is growing is used for propagating and many other purposes.

In another house—a narrow one—I noticed some well-grown Vines in pots. The pots containing the Vines were placed along the front and the canes trained up the roof, but so closely together as to cover the whole of it. By this plan double the quantity of fruit is obtained, and early Grapes ripen more surely than when the roots are outside in a colder medium than the canes. Each Vine in a pot is allowed to carry from six to nine and even twelve bunches, and finer Muscats could not be wished for. The Muscat of Alexandria, White Muscat, Canon Hall, and Tottenham Park Muscat, all do well; and the last, although in every respect like the White Muscat, is yet a much freer setter than any of the Muscats and not so liable to spot as most of them. Mr. Clarke, who has had ample opportunities of comparing the Vines in all stages of their growth, says the Tottenham Park is as free a setter as a Hamburgh. The bunches are stiffer, and the footstalk of the berry is considerably stouter than that of the Muscat of Alexandria. Another kind, under the name of White Muscat, is in no way different, I think, from the Muscat of Alexandria; but as I have seen it elsewhere under that name, I may be wrong.

In some pits were Peas in full bearing, a row each of Sangster's and Eclipse; the first dish, however, had been gathered three weeks previously.

The southern division of the garden is occupied by a pond with an island in the centre, and near to it is the approach from the park, and a neat little flower garden, mostly occupied by herbaceous plants; but I understand a re-arrangement of this garden is contemplated.

A barn-like building in its external appearance is used for the growth of Mushrooms, and has in its interior a bed in the centre on the floor, and two shelves, or beds, all round. These shelves, or beds, are formed in a very substantial way, the sides being of iron, and are about 15 inches deep and 5 or 6 feet wide, with iron-grated bottoms. Two beds were just coming into bearing, and promised a prodigious crop. I understand this house produces a succession in abundance of very fine well-flavoured Mushrooms.

All the garden walls are covered with fruit trees in good order, and bearing well. A Pear that Mr. Clarke speaks very highly of, the crops of which are enormous, is Hacon's Incomparable. It is a large melting Pear, in use for dessert from November to January. A black Mulberry on the wall adjoining a Fig-house has the branches trained perpendicularly downwards, and annually produces good crops. Besides the walled-in portion of the garden mentioned there are other two compartments, in one of which was a Fig-house, with Vines on the rafters. The Fig trees are planted inside the house, in narrow borders at the back, about 1 foot wide and 2 feet deep, and the trees trained to the back wall. The fruit was large, plentiful, and ripening. The variety was, if I mistake not, the Brown Turkey, the best of Figs for any purpose whatever. The narrowness of the borders would cramp the roots, and unless this is the case Figs make too much wood to bear well. The Vines were only newly planted, but Vines in pots were bearing splendidly, thus making use of the house until the young Vines are of sufficient size to bear. I incline to the opinion that Vines can be grown equally well in pots as planted out, and better where the border is outside on a cold wet subsoil. The house can then be used for a variety of purposes in winter; but where the Vines can be planted in the house or the border heated it saves time and labour to have them planted out. In this house I noticed a very fine plant of *Coleus Verschaffeltii* in preparation for planting in the flower garden to form a centre bed. It was more than 6 feet across, and by planting Golden Chain Geranium round it, edged with *Amaranthus melancholicus ruber*, it was expected an effective bed would result. Should Mr. Clarke carry out his idea and find it answer, I hope he will favour this Journal with a notice.

Two vineries adjoin the Fig-house. The Vines, however, had been cut down and grafted with newer and better kinds than the old ones, and beside each Vine was a Vine in a pot. The grafts were just beginning to break. Inarching, however, I consider a better way of working the Vine than grafting. Inarching can be done at any time, and a much stronger cane can be had the first season than from grafting, however well done.

Here, again, were more Vines in pots bearing profusely.

The pots were only 9 inches in diameter; and by placing them about 2 feet apart, and bringing the canes of both pots together, they were tied in the shape of a half-circle.

Some of the pots, or arches, had twelve bunches, and one being White Frontignan and the other Muscat Hamburgh, they were, indeed, very handsome. The Grizzly Frontignan, so liable to shank when planted in an outside border, was here in pots colouring beautifully, the bright amber colour of the berries contrasting well with the jet black of the Hamburghs. In this and the next house I noticed good plants of *Graptophyllum pictum*; *Crotons pictum*, *longifolium variegatum*, and *variegatum*; *Pothos argyrea*; *Cordyline indivisa*; *Dracæna terminalis*, and a host of other variegated and fine-foliaged plants too numerous to mention. Of the golden-veined *Lonicera aureo-reticulata*, Mr. Clarke possessed a good stock, and should this stand our climate in summer only, it will make a very effective edging. Who will be the first to try it? Mr. Clarke intends doing so this summer, and I hope he will communicate the result.

In the centre of the gardens stands a large greenhouse, or rather vinery, used as a late house. The Vines were just setting and promised an abundant crop. Under the Vines on a high steep stage were a great many winter-flowering plants, as *Cytisuses*, *Camellias*, *Azaleas*, &c., making good wood, the *Azaleas* being neatly trained. The house is heated by a combination of smoke-fires and hot water, just reminding one how ineffectual fires are in large houses.

Probing Mr. Clarke on the subject of fires *versus* hot-water, his reply was in favour of fires for small houses and a series of houses wide apart; but in favour of hot water for large houses or a series or range of houses requiring a forcing temperature. Notwithstanding that the houses at Studley are wide apart, most of them are heated by hot water and the old fires done away with, for all the houses are very old. Most of them, however, are kept at a high temperature.

Close by here are the under-gardeners' rooms, not so bothy-like as some of the like kind in other places, nor half so inconvenient. A commodious fruit-room, or rooms, potting-sheds, &c., adjoin. Another walled compartment, called the orchard, contains all the best kinds of hardy fruit trees in full bearing; and on the north wall (south aspect), were some very fine Apricot trees, Moorpark chiefly, loaded with fruit. How many Apricot-houses have 700 fruit in them? Yorkshire is "a county where Green Gage Plums are never seen in perfection," says the writer of a book reaching into tens of editions; but so far is this from being true, that not only Green Gage Plum trees in Yorkshire bear well as standards and yield bushels of fruit, but there are Apricots on many cottages the fruit of which annually pays their rent.

In a Cucumber-house heated by hot water, the old fires being done, we saw Reynolds's Winter Cucumber. It is a free bearer; but as for being a handsome fruit, it is just the contrary. Nevertheless, it is said to be good for use, and it hangs a long time. Adjoining is a Pine-pit with plants in a flourishing condition, and some young Vines preparing for forcing, amongst which were Chavoush, Denbies Muscat, and other select and new kinds. In a small compartment were *Alocasia metallica*, *A. macrorrhiza variegata*, and other choice plants.

In the way is another Cucumber-house planted with Carter's Champion (will any one tell me the difference between Champion and an old kind that was formerly grown under the name of Smither's Winter Cucumber, or Scott's Winter?) and on some shelves at the back were Oscar Strawberries bearing profusely in pots. This variety promises to be a good forer.

Time would not allow of my seeing much more; but in a dung-frame I noticed an abundant crop of Melons, large enough for anything. The kinds were Orion, Golden Perfection, and a new kind, Princess Alexandra, evidently a good cropper, large, and of handsome shape, and if it be as well flavoured as it looks it will merit its name.

Crossing the park I reached the old flower gardens, and these call for a few remarks. They form one of those old-fashioned places with winding paths, verdant lawns disfigured by a bed here and another there, and shrubs planted hap-hazard. An old greenhouse with high front-lights or windows and an opaque roof shows old notions, and is, of course, of little value for plants, but it was gay with some

Geraniums, &c. A tea-house ornaments the centre of the garden, and some beds of various shapes in front, planted with bedding plants, looked pretty. On the lawn is a very large round bush of the variegated Box (*Buxus sempervirens variegata*), about 15 feet high, and not less than 60 feet in circumference. Besides a fine *Cedrus deodara* and *Picea cephalonica*, I noticed *Picea nobilis* or an intermediate variety between that and *Picea Nordmanniana* about 25 feet high. Roses in flower, *Rhododendrons*, ornamental deciduous trees, and evergreen shrubs worthy of note, are also met with everywhere.

Somehow I have omitted mentioning a Peach-house in its proper place; and as I noticed not only some fine fruit on the trees planted out, but some trees in pots preparing for forcing, I took Mr. Clarke's opinion about trees in pots. For early forcing or affording a few fruits early he considered a dozen or two of great service, but for affording a supply he denied their utility.

With another look at the new flower garden, and thanking Mr. Clarke for his kindness, I departed. In conclusion let me add that every thing under Mr. Clarke's management denoted indomitable perseverance, intelligence, and skill. In the welfare of his assistants he also takes great interest. They are privileged to leave work at five o'clock on Saturdays; and I trust that ere long every gardener and every man employed in gardens will have his hours of labour shortened, not only at Studley, but throughout the country, and instead of leaving work at five o'clock on Saturday, that they may have Saturday afternoon, like other trades, to themselves, to improve themselves by visiting other gardens, and collecting plants or studying nature in the field. Men who would not work harder during the remainder of the week to make up for Saturday afternoons I would discard from the gardening world; but I feel sure they would, and that no employer would regret granting the advantage.—G. A.

ROOTING STRAWBERRY-RUNNERS.

In rooting Strawberry-runners into small pots, ought the pots to be put under the first joint of the runner (I mean the joint nearest the plant) when the roots are sprouting, or under the last bud? If put under the first joint, ought the end of the runner to be cut off?—M. B.

[The question is of more importance than would appear at first sight. When it is desirable to increase a favourite kind every runner made may be layered with propriety, and thus a great number of plants may be obtained from one stool. In this case the first layer is put in, and every one that comes after in succession, and none are cut from the mother plant until all are rooted. In such case the first layers will generally be the strongest, and we would advise their being kept by themselves and planted by themselves. Where time and means exist, this plan of rooting the young plants is by far the best for making autumn-plantations, as the plants will be strong and established enough to produce a fair crop of very fine fruit the following summer.

We lately stated that we approved of layering the plants in small pots when forcing plants were required; but we said nothing as respects our correspondent's interesting inquiry as to what would be the best layer to adopt. Here, then, we must just tell what has been our practice of late, though somewhat opposed to the theory which experiments led us to consider as the soundest and best in the matter, if circumstances admitted of its being carried out.

To clear our way we must here allude to another query about runners, sent by a correspondent "QUIX," who has had a hot discussion with a friend as to whether runners were to be looked upon as feeders or robbers. We think that both are right and both are wrong, according to the stand-point of the argument. For instance: here is a Strawberry-stool that we wish to become as bulky and luxuriant as possible; and in such a case, were size and luxuriance the objects, we would look upon a number of runners, each rooting and catering not only for itself, but also by the connecting link for the old parent plant, as being much less robbers than feeders. It so happens, however, that we value the Strawberry-stool less for its mere luxuriance and large leaves than for its well-ripened buds and consequent extreme fruitfulness. In such a case we think little

of the young plants either as feeders or robbers. Our object is to concentrate as much strength in every parent stool as shall be compatible with the extreme of fruitfulness, and hence we shorten and remove all runners early. We even remove some of the weaker buds or shoots of the stool, not only that the strength may be concentrated, but that the sun and air may play freely round, and thus thoroughly ripen the buds for next season's produce. In gaining this result we prefer that the runners should grow a few weeks before they are nipped off, as sometimes when we have kept them nipped close all along, some of the extra strength being thrown into the buds, they were apt to burst or, as it is called, come blind, at the fruiting season. Though we generally keep our Strawberries about three years on the ground, we have often proved that if stools are so deprived of runners early, and the smallest shoots thinned out and rich top-dressings and manure-waterings given, the same plantation may be kept in good bearing order for many years, though no great advantage is thus gained—not enough, in our opinion, to make up for the advantages of a regular rotation of cropping.

Owing to the cold springs and dry summers our practice of late has been to layer the first runner that came, and, then, unless in a case of scarcity, to nip off the running point, to concentrate all the growing strength into the single runner. Thus, also, a few runners from a stool get more sun and air than if a greater number were layered. These first layers, in general, make as stated above, the finest and strongest plants, and if well managed afterwards, they will be found very fair for fruitfulness. If made too luxuriant, or kept growing too long in the autumn from rich surfacings and manure-waterings, the fine buds will be apt to split, and then it will be found that the extreme of luxuriance is not always attended with the extreme of fertility.

Though for the above reason of lateness of runners, we chiefly depend on the first-formed, we would under other circumstances be inclined to slip off the first-formed one without hurting the string, and wait for the second young plant on the runner to layer. Several years ago, we made experiments in this direction, and although the results were not in all cases so conspicuous as to give grounds for forming an unalterable theory, still they were such, as, on the whole, fully to convince us that the second young plant formed on the runner, though generally less luxuriant, was also generally more compact and fruitful. In this case two new runners were allowed to go beyond the layer on the pot. On account of the dryness of the ground, we have been obliged to take the first runners, and these will be none too early for early forcing; but we should be glad if others more favourably situated would make some experiments in this direction, as what may be of less moment when some thousands are grown, may be of considerable importance where only a score or two of pots can be managed.

From whatever cause, some stools will often be found much more inclined to sterility than others in the plantation, and these should be either pulled up or marked, so that no runners be taken from them. This is the more necessary, as almost constantly such plants send out the earliest and strongest runners, and the sterile habit is almost sure to be continued. We recollect picking-out such stools of the Elton perfectly barren, when all around them had a dense crop, and on marking and trying layers from such plants for four years, we never gathered a fruit from them. A little trouble in selection, therefore, is far from being labour lost in small gardens, where every foot of ground is an object. Take layers, then, if possible, from the best bearing plants.—R. F.]

FRUITERS' COMPANY.—On the 8th instant, the Master of the Fruiters' Company (William Brown, Esq.), with the Wardens (Josiah Walker, Esq., and Hilary Nicholas Niassen, Esq.), and Mr. O. C. T. Eagleton, the Clerk of the Company, waited upon the Lord Mayor at the Mansion House by appointment, and presented his lordship with a choice selection of all the fruits of the season. The Master and Wardens in addressing the Lord Mayor, referred to the deviation the Company had made from the ancient custom of presenting sundry bushels of Apples in the winter, and expressed a hope that the present now made would be more acceptable. The Lord Mayor acknowledged the present in

a very pleasant and appropriate manner, while the Lady Mayoress and the ladies of her family inspected with much delight the splendid specimens of Pines, Grapes, Peaches, Nectarines, &c., which were displayed in the saloon.—(*City Press*.)

THE OLD KENTISH PLOUGH.

It is seldom that the gardener calls in the assistance of expensive machinery to aid him in his manifold duties. True a water engine is a machine; and of late years much improvement has been made in mowing machines, which, in fact, have become so common, that it is a question if more turf is not kept in trim by these appliances than by hand-mowing. Machines for fumigating and dusting plants with sulphur have been tried, but are often more novel than useful; and there seems much difference of opinion about the relative values of the different tree-planting machines. The one containing the greatest complication of parts, giving it the greatest claim to the character of a machine, is certainly not the best; it is, in fact, more a mechanical apparatus than a horticultural one.

Pre-existing machines of a simpler construction, which did their work with a less amount of screw and other complications of a mechanical kind, but with, perhaps, an increased amount of hand-labour, did it much better for the patient operated on; simplicity in most things is best for the multitude, and unless a piece of mechanism perform its work much better and cheaper than the same can be done by hand it soon falls into disuse. Its strongest advocates fail in maintaining its popularity, and the original implement it was intended to supersede is restored to favour again. Nevertheless, we now and then meet with decided improvements in something where it was thought perfection already existed. Tools have been much improved in the last few years, digging tools especially; and the implements used in different localities have been brought into competition with each other, and the advantages and disadvantages of each made apparent to all not too deeply tinctured with prejudice.

Every one connected with rural affairs knows a plough; but there are plenty of ploughmen who are, no doubt, adepts at their calling that would be puzzled to understand the action of a Kentish plough; and if they accidentally came upon one not at work, they would, in all probability, suppose it to be intended for some other purpose than tilling the soil. And yet this implement—heavy, cumbersome, and to all appearance the most antiquated in its class—has not been exceeded in the quality of its work by the best-constructed implement that has been brought to contend against it from the manufactories which have a European reputation for the skilful adjustment of all the parts of their implements. In the matter of ploughs, Kentish farmers have taught their brethren a lesson in other parts of the kingdom, while in return they have received some useful hints in the same way themselves. Doubtless some amount of prejudice still exists in both cases, but that will in time vanish. Sound principle will in the end prevail; and when once the way is opened for the admission of an error, its removal is more easy. Returning, however, to the matter of ploughs, let us see in what way the Kentish plough differs from others in the way in which it does its work.

In most parts of England where I have been the ploughing-up of a Clover-bed is regarded as a job in which ploughmen delight to show off their skill; and when working hours are over it is not unusual to see them all walking backward and forward along the headland, examining with the eyes of connoisseurs each other's work, and commenting accordingly. The qualification for such work is to exhibit the furrow slice turned up with great exactness, so as to resemble the ridge of a house, or, in fact, a series of ridges and furrows, each side of the ridge presenting the angle of 45°; and, assuming the sharp edge of the ridge and of every ridge to be straight, the work would be considered well done. This is, or until lately was, one of the criterions of good ploughing in the central and northern counties of England. We will now compare it with what is done in Kent.

The Kentish ploughman turns over his furrow in quite a

different manner. He has been to see the fashion of ploughing in the midland counties, and he tells them plainly they do not turn over the soil at all, they only turn it three-quarters over; that their vaunted angle of 45° means that instead of having turned the ground over as much as 180°, as he does at home, they have only moved it 135° from its original position; and that he could show them how to turn it upside down, which, in fact, he does completely—the criterion of good work with him being to do so, leaving the bottom of the furrow slice quite flat on the top and a clear crease or line of marking between each furrow as straight as possible. The advantages of this plan are that any weeds, rubbish, or dung that may be on the top is completely buried, the weeds being less likely to grow than when half buried in the three-quarter-turnover system of other places, and he consequently feels not a little proud of the old-fashioned wooden instrument which he sees others despise.

Kentish ploughs have also another peculiarity—only one furrow is wanted, as they are so constructed, that by the movement of a mould-board and another direction being given to the coulter when they come to the end of a furrow, they return in the same ground, and turn the soil in the reverse way, the alteration not taking more than a minute to make. Much stress has been laid on this point at meetings where Kentish ploughs have competed with others, the latter requiring two furrows to be thrown against each other to start with, forming a sort of ridge, certainly not wanted for any purpose; whereas the Kentish plough, by beginning at the outside, and using only one furrow, leaves all its work as level as where it begins. It is needless to say it could go round a piece the same as other ploughs do; but it is seldom if ever done. Some little alterations have been made in it during the last few years, but comparatively few to what its neighbour, the iron plough, has undergone in the hands of a Howard and a Ransome; and it is not too much to say that these great makers have borrowed from the Kentish plough more than that implement has done from them; and at a challenge meeting some two years ago, between the advocates of the ploughs of one of these makers and the old Kent implement, much interest was evinced, and impartial judges were unable to determine which of them did the best work. Even scientific men, who assume to be oracles in their way in deciding on the laws which ought to govern mechanics, have found their theories overthrown at times by the performances of the Kentish plough.

A gentleman well versed in engineering matters and mechanical constructions, thought he had invented a much lighter implement, but when subjected to the test of the dynamometer, it was found to be the reverse in the draught wanted. One or two leading features in the Kent plough being good seem to atone for all that appears clumsy. The parts that penetrate the ground are long, the sole of the plough being upwards of 4 feet in length, and the wing as long; and it is pulled forward like a long, thin wedge rather than a short thick one. There is less iron in it than in most ploughs. The turn-wrest or part moveable at each end is of wood, as also are the beam and most other parts; but there being no curved mould-board as in other ploughs, strangers not acquainted with its uses would hardly suppose that it was intended for ploughing, and it seldom fails to excite the derision of such as inspect it for the first time, if not at work; but when so employed, and the qualities of the work done are examined, there is generally a pause, and an inward question is asked, Can this be wrong? Conviction is very unwilling to say No, and the idea is carried home that soils must assuredly be better that are completely turned over than those which are only partly so, and the application of this problem may be carried into other quarters as well; but enough has been said for the present, and if agreeable, I will at a future time return to the subject.—J. E.

SELECT ORCHIDACEOUS PLANTS.—The fifth Part of this beautiful and trustworthy publication is just published, and is a worthy companion to its four predecessors. It contains *Pleione lagenaria*, *Vanda cœrulea*, *Dendrobium Wardianum*, and *Lælia superbiens*. The portraits by Mr. Fitch, the descriptions by Mr. Warner, and the cultural directions by Mr. Williams, are all excellent.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

RHODODENDRON BATEMANI (Mr. Bateman's Rhododendron).—*Nat. ord.*, Ericaceae. *Linn.*, Decandria Monogynia. Discovered by Mr. Booth in the Bhotan Himalaya. Very robust. Flowers crimson and large. Noble species.—(*Bot. Magazine*, t. 5387.)

ORNITHOGALUM CAPITATUM (Capitate Ornithogalum).—*Nat. ord.*, Asphodeales. *Linn.*, Hexandria Monogynia. Bulbous-rooted greenhouse plant from Cape of Good Hope. The white and purple flowers open in February.—(*Ibid.*, t. 5388.)

MEYENIA VOGELIANA (Vogel's Meyenia).—*Nat. ord.*, Acanthaceae. *Linn.*, Didynamia Angiospermia. A most lovely stove plant from Fernando Po. Flowers purple with orange throat, opening in May.—(*Ibid.*, t. 5389.)

NEPHELOPHYLLUM SCAPIGERUM (Scapigerous Nephelaphyllum).—*Nat. ord.*, Orchidaceae. *Linn.*, Gynandria Monandria. Imported from Borneo by Messrs. Low & Sons, Clapton. "A singular and beautiful little Orchid." Flowers yellow and white with purple blotches.—(*Ibid.*, t. 5390.)

ERIA OBESA (Thick-stemmed Eria).—*Nat. ord.*, Orchidaceae. *Linn.*, Gynandria Monandria. Native of Martaban and Moulmein. Flowers white. Flowered in a warm stove in February.—(*Ibid.*, t. 5391.)

JAPANESE CLEMATIS.—*Clematis Fortunei*, white; and *Clematis florida Standishii*, violet blue. Both plants were found by Mr. Fortune in Japan. Probably hardy, and have had first-class certificates from the Floral Committee of the Royal Horticultural Society.—(*Floral Magazine*, pl. 153.)

PEARCE'S OURISIA (*Ourisia Pearcei*).—A dwarf hardy perennial of great beauty. Introduced from Chili by Messrs. Veitch, Chelsea and Exeter Nurseries, through their collector, Mr. Pearce. Flowers crimson streaked with darker crimson. It had a first-class certificate from the Floral Committee.—(*Ibid.*, pl. 154.)

RHODODENDRON PRINCE OF WALES (Rollisson's).—A cross-bred between *Rhododendrons javanicum* and *retusum*. Flowers bright orange.—(*Ibid.*, pl. 155.)

HERBACEOUS CALCEOLARIAS.—Four varieties raised by Messrs. Dobson & Son, Isleworth.—(*Ibid.*, pl. 156.)

CAMELLIA CARLOTTA PAPUDOFF.—Introduced by Messrs. Veitch from Florence. "A first-class variety." White blotches on a ground of carmine rose.—(*Florist and Pomologist*, ii., 89.)

WINTER HAWTHORN APPLE.—Roundish-oblate, large, pale yellow, mottled red on the most sun-exposed side. "The flesh firmer than that of the old Hawthorn, with all its qualities." First-rate culinary Apple, in use from October to March.—(*Ibid.*, 96.)

CHIEF GARDENS IN GREAT BRITAIN.

I FEEL confident that the readers of THE JOURNAL OF HORTICULTURE will feel obliged to you for giving a list of the chief gardens in Great Britain; but permit me to suggest that your correspondents on the subject should be careful in stating to you whether their lists comprise the principal or a few of the best gardens of a county, for it is very evident that the gentleman who furnished you with a list of the "principal gardens in Northumberland" has never crossed the Aln, otherwise he would not have omitted Chillingham Castle, where the finest flower garden in the county is to be seen, and where the greatest number of bedding-out plants are; and it is quite patent that there is a very superior selection of French Pears cultivated successfully in the fruit gardens; and in the American garden, quite distinct from either of the above, there is as fine a collection of *Rhododendrons* as is to be found in the north. Mr. Bowey is gardener. And why should he omit Lilburn Tower close by, the seat of — Collingwood, Esq.; where the gardens are almost overshadowed by the cloud-capped Cheviots? Yet here in the earliest spring Nature bursts into such beauty, that I have frequently gone miles out of my way to see in bloom the splendid collection of *Rhododendrons*, *Azaleas*, *Kalmias*, and other spring-flowering shrubs which thrive so well under the treatment of Mr. Dees. Both fruit and flower garden are good. Here, also, about four or five years ago they could boast of an *Araucaria imbricata* only second to some of those fine specimens at Belsay. Mr. Dees is very

successful with the *Wellingtonia gigantea*, but none of them are so tall as that very fine specimen near to the old castle at Belsay.

It would be an easy matter for me to name at least seven or eight gardens in Northumberland equal to, and some superior to, those named in your Journal this week. Why are Howick Gardens not named, the seat of the Right Hon. Earl Grey, Mr. Moore, gardener? It is true there are better Orchids at Wallington and Cresswell; but Howick Gardens are of more general interest to the tourist and visitor than some you have named; so, also, are those of the Home Secretary, and Eslington Gardens, besides many others.—P.T.E.S.

[We wish that our correspondent had increased our obligation by giving a tabular list of all the gardens he knows worthy of a visit. No one can be acquainted with all such gardens in a county, and we wish every correspondent to particularise only those really known to him. We cannot have too many of such contributions, and we shall be obliged by any one sending us the names of any two or three gardens he knows are worth visiting.—Eds.]

THE GREAT BIRD QUESTION.

IN No. 117 of THE JOURNAL OF HORTICULTURE, Mr. Robson asks for evidence that small birds eat caterpillars. I can supply some on this point. A pair of the large titmouse this year made a nest in the potting-shed in the garden here, and reared a numerous family—six or seven, I believe. One day, being in the shed, I saw both the parent birds on an Apple tree within a very few feet of me, and each with a caterpillar, about three-quarters of an inch long, in its beak; whether these were the caterpillars which infest Gooseberry bushes or not I cannot pretend to say, but, like them, they were of a light colour. The destruction of caterpillars by this pair alone was, in all probability, very great, as there was so numerous a family to feed.

Since the young birds have taken to the wing they are, however, often to be seen escaping from the rows of Peas with a Pea in their beaks; and I apprehend that the same is the case with many small birds, that their parents feed them with insects while in the nest, but that when they have to provide for themselves they indulge in a mixed, or, perhaps, sometimes an entirely vegetable diet. If this be so, the proper course seems to be to leave them undisturbed while nesting, and to diminish their numbers, where necessary, at a later time.

I have no hesitation in saying that in some places very little fruit would be left if the birds were allowed to increase without check. It must be remembered that their natural enemies, hawks and owls, are actively persecuted by gamekeepers, and very greatly diminished in numbers.—SUSSEX-ENSIS, K—Park, Sussex.

MAY. FLOWERS.

FLOWER gardens in most places are, during the month of May, very deficient in a fine display of bloom. The bulbs such as Crocuses drop; Hyacinths, &c., are all over; and the bedding-out plants are only just planted out, and not in bloom, even in the most favoured places as to climate and shelter. Though many of our aristocratic families are during that month in London, yet there are large numbers who have nice gardens that prefer the country—their home in fact, to the dust, heat and discomfort of town life. Such families, no doubt, would be glad to have their flower-borders well-stocked with Flora's gifts, but they are not just up to the mark how to accomplish this point in May.

The above reflections passed through my mind on visiting a garden near Manchester that I have referred to more than once, I mean the garden belonging to J. Shorrocks, Esq., the Lodge, Ashton-on-Mersey. I saw these gardens about the middle of May, and a more gorgeous display of flowers I never beheld at any time of the year at any place whether in England, Ireland, or Scotland. The garden was literally a blaze of flowers, old-fashioned indeed, but yet very gay and effective. For the most part they grew on borders in front of shrubs, and were in such masses that very little soil was visible.

I was so much pleased with the display that I took notes of their names, and thought the list would be useful to many of the readers of THE JOURNAL OF HORTICULTURE. I was somewhat surprised at the small number of species, though that only shows how a good gardener like Mr. North may furnish his employer's flower-border at, comparatively speaking, little or no expense.

In order to render this list as useful as possible I shall not only give their names but also their colours, height of growth, the soil they will thrive in, and lastly the mode of propagation.

ALYSSUM SAXATILE.—Bright yellow. Height 9 inches. Soil, light sandy loam on a dry bottom. A plant that spreads much; many of the patches have measured 3 feet across. Propagated by slips put in in June under a bell-glass; but the best way to procure a stock is to purchase a shilling packet of seed and sow in April or early in May on a warm border, and transplant the seedlings, as soon as large enough, where they are to bloom. In order to obtain a large patch quickly, plant five plants 6 inches apart together, and the second year they will make a dense mass and a good display.

ANTHERICUM LILIASTRUM.—Clear satiny white. Height, 1 foot, light sandy loam well-drained. Propagated by dividing the plants in autumn.

AUBRIETIA DELTOIDEA.—Blue. Height, 2 inches. Soil, light sandy peat and loam. Propagated either by slips put under a bell-glass in a shady place in June, or by dividing the plants just after the bloom is over, watering the divisions every evening if the weather is dry. A beautiful spreading plant.

BELLIS PERENNIS.—A dark red variety. Height, 4 to 6 inches. Soil, any good garden. Propagated by divisions after flowering. Plant five together to form a good patch to be effective.

CHEIRANTHUS MARSHALLI.—Deep orange. Height, 9 inches. Soil, common garden. Propagated by slips taken off in May, June, or July, and planted in a bed, shading and watering them till rooted. This beautiful plant is easy to propagate. I seldom lose a single cutting. To make more sure it is desirable to make each cutting with a portion of hard woody stem at the bottom. Such cuttings or slips are more certain to root. As soon as they are rooted lift them up carefully, and transplant them where they are to flower. Here again, in order to make a good show of bloom at once, these young plants should be put in in patches of at least five together. Plant one in the centre and four around it, and you will have a goodly display the year after.

IBERIS SEMPERVIRENS (Perennial Candytuft).—Height, 6 inches. Colour, clear white. Soil, any good loam not too rich, or it will spread too much and not flower freely. Propagated by cuttings in June under a bell-glass, though I strike the cuttings freely enough when planted in shallow

pans in ordinary loam and sand, with a layer of sand on the top, and placed in a shady part of a greenhouse. The best kind of cuttings are such as are a little hardened at the base. With such I generally manage to root nine cuttings out of ten. When rooted plant them out in patches of three only, because the plant naturally spreads very much. I find it necessary every year to cut the plants in severely as soon as the bloom is over, in order to keep the patches within moderate compass. This is one of the greatest ornaments to the flower-borders throughout May; with me it is just going out of bloom in the first week in June.

PANSIES.—The dark varieties are most suitable for a mixed flower-border. I observed at this place that the yellow and white colours rather predominated: hence the dark varieties of Daisies and Pansies were most to be preferred. Any common kinds answer the purpose, provided they are pretty hardy and free bloomers.

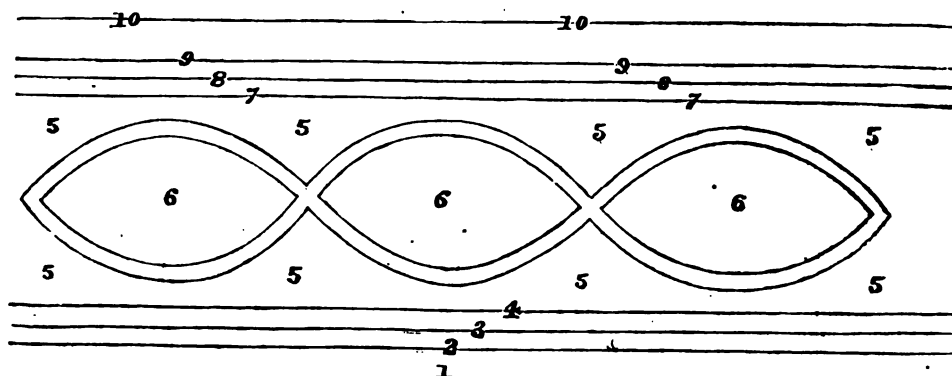
VERONICA DECUSSATA.—Pale blue. Height, 1 foot. Soil, common. Propagated easily by division as soon as the bloom is over. To form a large patch, plant five or more plants together at 6 inches apart. I am not certain this is a correct specific name, especially as I cannot find it in the *Cottage Gardener's Dictionary*. It is, perhaps, *V. gentianoides*. At any rate, it is decussate, and is a handsome border perennial, perfectly hardy, and delicately beautiful.

With these few species of hardy perennials planted at regular intervals, the borders here in May were truly splendid. No doubt the collection might be more numerous, and Mr. North informed me he intended to add to it as soon as he could. I ought to mention that the effect was enhanced by a good collection of hardy Azaleas of various colours, which formed a pleasing background to the low-growing flowers. The pleasure ground was in high order, the lawn close-mown and of the finest kinds of grasses, the lines of the borders were well defined, and not a vestige of a weed was to be seen.

In the parts where bedding-out plants are used, Mr. North had ventured to plant out early, and fortunately no late frosts have taken place in the neighbourhood. So it is to be hoped that this style of flower-gardening will be more effective than it was last year, when in many places in the north, owing to the wet summer, many beds totally failed, others grew too much into leaf, and even those that did flower had their blooms dashed and spoilt by the splashing rains.

I was much pleased with a novel mode of forming a ribbon-border here. It is the gardener's invention, and looks well, even as soon as it is planted. There are two straight lines and then two wavy lines that cross each other. These two lines are planted with Flower of the Day Geranium crossed with *Calceolaria Aurea floribunda*.

I send a rough sketch of the bed or border. It is 72 feet long and 12 wide, and is planted thus:—



1. Walk in front of hothouse.
2. Edging of Box.

3. Lobelia speciosa.
4. Variegated Sweet Alyssum.
9. Grass border.

5. Purple King Verbena.
6. Firefly Scarlet Verbena.
10. Low hedge.

7. Tom Thumb Geranium.
8. Calceolaria Aurea floribunda.

The sketch is drawn to a scale of one-eighth of an inch to one foot. It is just half the length of the border. I have seen the latter since the above was written, and in my opinion it is much more pleasing and elegant than mere

straight stiff lines. Next season let some one that has space try the same plan, I am sure he or they will be well pleased with it.

T. APRLEY.

ECONOMICAL ARRANGEMENT OF FORCING AND PLANT HOUSES, &c.

In these days of rigid economy, when persons of ample means delight to deal in the cheapest market, perhaps the following plans and suggestions for the economical arrangement of plant-houses upon a small scale, may not be without interest to some of our amateur patrons; and even young gardeners and nurserymen may study them possibly with profit to themselves. The plans have been prepared not only with strict regard to economy of space—a matter of considerable importance in small gardens—but also so as to turn the whole of the materials to the greatest advantage, and that at, considering the permanence and durability of the erections, a very moderate cost. In the construction of horticultural as in all other buildings, there is no economy in “make-shifts;” the best materials and the best work-

manship will ultimately be found the most economical, and those who save a few pounds by what is technically called “scamping a job,” in the first erection, will generally find that they have been penny wise and pound foolish before the end of the first seven years. A range of houses on this plan has lately been erected for a gentleman. The forcing-house has yielded abundance of Roses and other forced flowers, with splendid Cucumbers, and at the present time a very fine crop of Melons is coming forward. These and the Cucumbers are grown in large pots plunged in leaf mould over the tank, and the roots are allowed to grow in the plunging materials. Under the Melons, &c., which are trained within a foot of the glass, plants for flower garden purposes are propagated, and a few stove plants, as Gloxinias, Achimenes, Gardenias, &c., are grown underneath. For the

above purposes, or for the cultivation of a select collection of stove plants or Orchids, or even for the growth of the Pine Apple, perhaps no better arrangement could be made, the command of heat, both for the plunging-bed and the atmosphere, being of the most efficient description.

If the forcing-house was devoted to the cultivation of Orchids, for which it is admirably adapted, we should build the inner walls on each side of the pathway in rockwork, and also place a mass of rockwork the whole width of the house against the end wall, leaving niches to be filled with suitable material for the cultivation of some of the finer kinds of Ferns, Mosses, and such Orchids as are likely to succeed in such a situation. By merely opening a communication on each side from the tank and heating-apparatus, the rock-work might be supplied with any amount of moisture or bottom heat; and by simply placing a cistern of water above the level of the rockwork and over the boiler, silvery streams of warm water may be made to trickle over the tortuous

track of the rockwork, finally refreshing the feelings, and ministering to the picturesque character of the scene, by terminating in a miniature waterfall, the grateful rippling of which will do much to cheat visitors into the belief that the house is not so warm as the proper cultivation of its occupants renders it necessary that it should be.

“Oh! but,” remarks some adept in the art and mystery of growing Orchids, “to do the various kinds justice, and produce them in perfection, two houses are required.” Granted; therefore, if you please, we will confine the Indian kinds to the house we have been speaking of, and by continuing the same heating arrangements, we will convert the greenhouse into a house for the growth of those kinds which are natives of Mexico and colder climates; and thus, with

one exception, we have arrangements as complete as the most fastidious could desire, where light, heat, and moisture are at command, to do all that is required for the proper cultivation of this beautiful tribe of plants. Indeed, in the laconic language of one of the best gardeners in the country, these are “nice snug houses,” suitable for plants of all kinds; and if Nature’s journeyman, the gardener, only performs his part properly, success is certain.

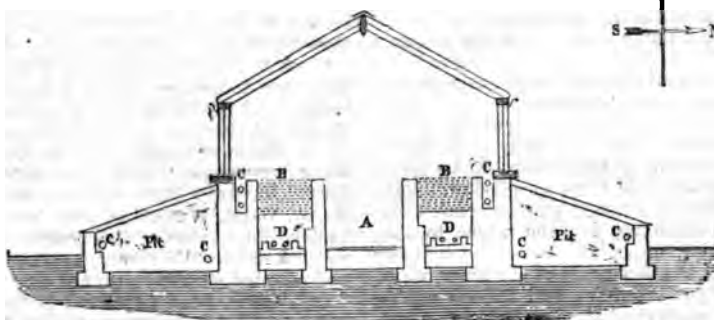
For the cultivation of Vines in pots, such houses would be perfect; and one of these houses, with the side-pits to bring on successional plants, would produce Grapes sufficient for a small family, and that for several months in the year.

In the construction of this range of houses the position of the boiler is not indicated, but we propose to fix it at the north end of the forcing-house, to heat the tanks, house and pits, independently of each other, hav-

ing stop-cocks or valves to each set of pipes, so as to work the whole or a part at the same time, as may be necessary. The greenhouse will be heated by continuing the pipes from the forcing-house, placing stop-cocks where the pipes enter the greenhouse. The pipes for surface heat are placed in a trough lined with cement, so that in case of need, when a very moist heat is required, water may be placed around the lower pipe to create moisture. The pipe for surface heat must be 3 inches in diameter, and those running through the tank for bottom heat 2 inches. For the side pits two-inch pipes will be sufficient for ordinary purposes; but if a strong heat is required, why then, three or four-inch pipes will be required.

The cold pits adjoining the greenhouse will be found very useful for the growth of Mignonette, Violets, and Stocks through the winter, and also for protecting plants for the flower garden, and in the heated pits Roses and other flowers may be forced.—(A., in *Gardeners' Magazine of Botany*.)

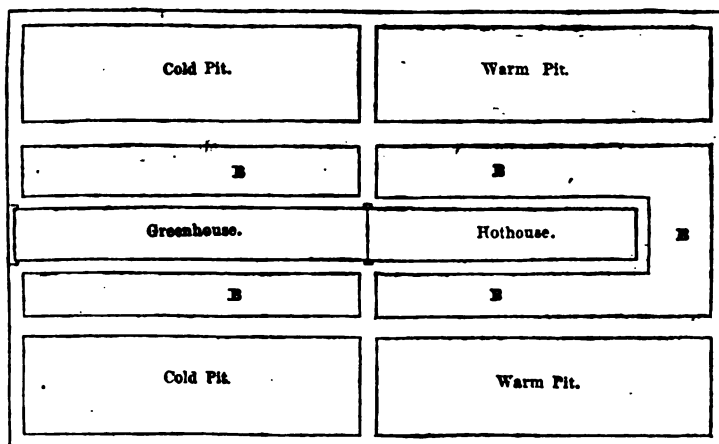
SECTION OF FORCING-HOUSE.



REFERENCE TO PLAN.

- A, Pathway.
B, Bed for plants to stand upon, or be planted in.
C, Hot-water pipes three-inch diameter in house, two-inch in pits.
D, Hot-water tank for bottom heat, heated by two two-inch pipes.

GROUND PLAN OF HOUSES AND PITS.



THE BIRMINGHAM ROSE SHOW.

JULY 16TH AND 17TH.

WHEN any great design is carried into effect and proves to be a success, the word "patronage" is whispered about as though the rich man's purse were the only or chief motive power; but those who are in the habit of looking beneath the surface will surely acknowledge a motive power still more potent. In support of this view I would instance the late Birmingham Rose Show, which, as a Rose show, I believe was second to none in the kingdom, and, probably, in the world; and it was held in the midst of a manufacturing town which, like manufacturing towns in general, is densely populated, very smoky, and inhabited by two classes of people—employers and employed, boasting of few if any of the upper ten thousand.

The Town Hall in which the Show was held is a fine massive building of the Corinthian order of architecture. Interiorly it is both spacious and lofty, and the ceiling is finely decorated. At one end is an orchestra surmounted by one of the finest organs in the country; and below the organ a crescent was formed by some of the stages or seats being arranged with Camellias, Conifers, Ferns, and other plants, and within this crescent the band performed.

The Roses, which certainly were the principal features of the Show, were arranged on stages in the body of the building; and although a portion of them were to be found up-stairs, the most important collections were below. Each temporary stage contained two rows, and between these were Ferns, Begonias, Caladiums, &c., the whole looking exceedingly well and doing credit to those who had the arrangement of them. I took a few notes of the Show, which I send for the benefit of your readers; and though my remarks may not be in so masterly a style as those of a professional reporter, yet I will do what I can.

In giving any opinion on the condition of the flowers I can only speak from impression, for, not having seen the preceding Shows, I cannot speak from comparison. There were Roses that had not attained their best, and there were those that were past it. Some were not without fault as to form and colour; but, on the whole, I consider they were very good. Some would say that the flowers were too open, but every Rose-grower knows what a difference a single day will make in the appearance of a flower in the bright sunny weather that has lately prevailed. Making allowance for this, I consider no one has a right to complain that the exhibitors had not done well. Certainly instances were not wanting in which the same varieties would differ considerably on different stands; but this is natural and may be the effect of locality, or it may be that individual flowers differ on the same plant.

In Class A (Nurserymen), ninety-six varieties, single trusses, the first prize was awarded to Mr. B. R. Cant, Colchester. Among his lot were *Lælia* (very fine), *President*, *Madame Vidot*, *François Lacharme*, and *Gloire de Dijon*, all first-rate. The second prize went to Mr. John Keynes, of Salisbury. In this collection were some good blooms of *Jean d'Arc*, *Jules Margottin*, *Maréchal Vaillant*, *Mdlle. Bonnaire*, *Comtesse Ouvaroff*, *Madame Knorr*, *Beauty of Waltham*, *Alphonse Karr*, *Celine Forestier*, *Lady Stuart*, *Madame Hector Jacquin*, *Madame Boll*, *Triomphe de Rennes*, *Gloire de Santenay*, *Olivier Delhomme*, *Souvenir de Comte Cavour*, *Baron Gonella*, *Comte de Nanteuil*, *Général Jacqueminot*, *Gloire de Vitry*, *Senateur Vaisse*, all good and fresh-looking—more so, in my opinion, than the preceding, and they were certainly better arranged. Messrs. Paul and Son, Cheshunt, and Mr. W. Paul, of Waltham Cross, were equal third in this class. In the collection of the former were good flowers of *Eugène Desgaches*, *Comtesse Cécile de Chabillant*, *Duc de Rohan*, *Jaune of Smith*, *Madame Pierzon*, *Niphotos*, &c., all good and neatly packed; but many would say the flowers were too full blown. Mr. W. Paul's collection contained, in addition to fine flowers of some of the above, *Duc de Cases* (very dark), *Général Jacqueminot* in fine condition, and *Louis XIV*.

In this class entries were also made by Messrs. Francis, of Hertford, who showed *Louis Peyronney* very large, and the following first-rate:—*Baron Gonella*, *Louise Magnan*, *Prince Camille de Rohan*. From Mr. Turner, of Slough, whose collection looked really charming, there came amongst

others good blooms of *Triomphe de Caen*, *La Boule d'Or*, *Eugène Appert*, *Gloire de Santenay*, *Souvenir d'un Ami* (good), *Madame Bravy*, *Madame Charles Wood* (very large). Mr. Cranston's collection included many good flowers, but they were loosely arranged compared to the last. Mr. R. Smith also entered in this class.

In Class A (Nurserymen), forty-eight varieties, three trusses, the first prize was carried off by Mr. John Keynes, of Salisbury, with a most excellent stand, all fresh and beautiful. The second prize went to Messrs. Paul & Sons, Cheshunt; and the third to Mr. B. R. Cant, of Colchester. In this class were several other exhibitors, including Messrs. Francis, Keynes, W. Paul, Paul & Sons, Smith, and Turner. In Mr. Francis's collection I particularly noticed fine blooms of *Anna de Diesbach*, *Mrs. Rivers*, *Catherine Guillot*, *Comtesse de Chabillant*, *Prince Imperial*, *Madame Schmidt*, and what seemed to me *Jules Margottin* named *Senateur Vaisse*.

In Class A (Nurserymen), twenty-four varieties, three trusses, the first prize was taken by Mr. Keynes; the second by Mr. W. Draycott, Humberstone, near Leicester; and the third by Mr. George Batley, of Rugby.

Class A, No. 4, twenty-four varieties, single trusses, was open only to nurserymen in the counties of Warwick, Worcester, and Staffordshire. The first prize was awarded to Messrs. S. Perkins & Sons, Coventry; the second to Mr. W. H. Treen, of Rugby; and the third to Mr. George Batley. The other competitors in this division were Mr. J. Cole, of Birchfield, near Birmingham; Mr. R. Smith, Worcester; Mr. A. Wood, Worcester; and Mr. R. H. Vertegans, Chad Valley, Edgbaston. The trusses shown here were in no way inferior to the others, proving that these counties are well adapted for the culture of this the queen of flowers.

In Class B, No. 5 (Amateurs), forty-eight varieties, single truss, the first-prize cup was given to Mr. J. T. Hedge, Reed Hall, Colchester. Here were splendid flowers of *Reine Victoria*, *Comtesse Cécile de Chabillant*, *Beauty of Waltham*, *Jaune of Smith*, *Alexandre Fontaine*, *Madame Charles Wood*, *Louise Magnan*, *La Boule d'Or*, *Mrs. Rivers*, *Auguste Mié*, *Triomphe de Caen*, *Louis XIV.*, and *Solfaterre*. The second prize was awarded to Mr. S. Evans, gardener to C. Newdegate, Esq., M.P., Nuneaton, Warwickshire, who also had some good blooms; and the third prize to the Rev. S. Reynolds Hole, Cauntton Manor, Newark.

Class B, No. 6 (Amateurs), twenty-four varieties, single trusses.—The first prize went to Mr. J. T. Hedge, Colchester; the second to Mr. S. Evans, gardener to C. N. Newdegate, Esq., M.P.; and the third to Mr. E. Sage, gardener to Earl Howe, Atherstone. These collections were all good, and some were really first-rate.

Class B, No. 7 (Amateurs), eighteen varieties, single trusses.—The first prize was awarded to Mr. C. J. Perry, Castle Bromwich; the second to Mr. J. T. Hedge; and the third to Mr. E. Hunt, whose collection included good blooms of *Smith's Noisette* and *Prairie de Terre Noire*.

Class B, No. 8 (Amateurs), twelve varieties, single trusses.—The first prize was taken by Mr. J. Stratton, Manningford, Wiltshire, with a collection including *Cloth of Gold*, *Triomphe de Rennes*, and others little if anything inferior. Mr. E. Sage, gardener to Earl Howe, had the second prize; and the third went to Mr. E. Hunt, Leicester, who had *Celine Forestier*, *Madame Hector Jacquin*, and *Madame C. Crapet*, very good.

Class B, No. 9 (Amateurs), twelve varieties, single truss, open only to amateurs resident within fifteen miles of Stevenson's Place, Birmingham.—The first prize was awarded to Mr. W. Brown, gardener to Mrs. Alston, Elmden Hall, near Birmingham; and equal second prizes were given to the Rev. P. M. Smythe, the Rectory, Solihull, and Mr. C. J. Perry, Castle Bromwich.

Class B, No. 10 (Amateurs), six varieties, single truss, open only to amateurs resident within fifteen miles of Stevenson's Place, Birmingham.—The first prize was taken by Mr. C. J. Perry, Castle Bromwich; the second prize by Mr. W. Brown, gardener to Mrs. Alston, Elmden Hall; and equal thirds by Mr. R. Garnet, Sutton Coldfield, and Mr. B. Wright, the Quarry House, Great Barr, Staffordshire.

Class B, No. 11 (Amateurs).—Six varieties, open only to amateurs resident within three miles of Stevenson's Place, Birmingham. In this class there were no entries.

Class C, No. 12 (Open).—Collections not exceeding twenty-

four new Roses of 1860-61-62, single trusses. The first prize went to Mr. John Keynes; the second prize to Messrs. Paul & Son, Cheshunt, Herts; and the third to Mr. C. Turner, Slough. Entries were also made by Messrs. Cant, Cranston, S. Evans, and W. Paul. The collections were very similar to those in other classes, and contained many of the same varieties.

Class C, No. 13 (Open).—Best new Roses of 1860-61-62, six trusses. Here Mr. J. Keynes was first with *Maréchal Vaillant*, Madame Furtado, Charles Lefebvre, and Olivier Delhomme. Mr. Wm. Paul was second. He had *Madame Furtado* and *Beauty of Waltham*. Messrs. Paul & Son were third with *Madame Charles Wood*. Mr. Cranston, also, had fine trusses of *Louis XIV.*; Mr. Cant, *Madame Furtado*; and Mr. Francis, *General Washington*.

Class C, No. 14 (Open).—Best six varieties of Roses, single trusses, with stem and foliage as cut from the tree; each truss to be shown singly in a vase. The first prize was awarded to Mr. E. P. Francis, Hertford; the second to Mr. G. Batley, Rugby; and the third prize to Mr. Turner. There were many other exhibitors in this class.

Class C, No. 15 (Open).—Best design, basket or vase, of Roses and Rose foliage. Mr. R. H. Vertegans, Edgbaston, took the first prize; second, Mr. R. T. Evans, Severn Lodge, Shrewsbury; and third, Mr. Turner, Slough. There were here some fine masses of bloom, and all deserved notice; but I did not consider there was anything striking in the vases or the arrangement.

Class C, No. 16 (Open).—Best bouquet for the hand made entirely of Roses and Rose foliage. First prize, Mr. J. Cole, Birchfield; second, Messrs. F. & A. Dickson, Upton, Chester; third, Mr. Vertegans, Edgbaston.

Mr. Perry, of Castle Bromwich, exhibited a fine stand of *Verbenas*, consisting of forty-eight bunches of five trusses each. Many plants were also contributed by the surrounding gentry. There were several good plants of *Cissus discolor*; a fine *Maranta zebrina*; some very good Ferns, including a large *Acrostichum alciornae*, *Pteris argyrea*, and others; *Adiantum affine*, *brasiliense*, and the ever-beautiful *cinereum*. There were also varieties of *Caladiums* and *Begonias*, *Coleus Verschaffeltii*, and the older *Blumei*, looking rather pale, and a few *Heaths*, at sight of which many of our good growers would make an involuntary grimace. These and other plants were contributed for the purpose of decoration and not for competition. They certainly did their part well, affording an agreeable change from the glowing masses of colour presented by the Roses.

Under the head of Horticultural Implements and Garden Ornaments there were many objects exhibited of considerable interest to the gardener. Messrs. Lloyd & Summerfield, Park Glass Works, Birmingham, showed an aquarium with fountain. This was surrounded with Ferns and fronted by a plant of *Cyperus alternifolius variegatus*, a most interesting plant. From the same firm also came vases for flowers and fruit, some of them filled as if ready for the table, and looking very tempting. A somewhat similar exhibition was made by Mr. Jackson, of Birmingham. There were also some vases and table ornaments from Messrs. Naylor and Dunn, of London. The silver plate of Messrs. Derry and Jones, Birmingham, comprised some very graceful dinner-table ornaments; also those by Mr. Spurrier and by Messrs. Gough & Sylvester, whose flower-vases were exceedingly pretty.

Pottery from Mr. J. Jackson, glass of Mr. C. Bryan, and meteorological instruments from Mr. T. Rabone and Messrs. Field & Son, varied the character of the Exhibition as well as added to its interest.

Garden implements were shown by Messrs. Mapplebeck and Lowe; and, in looking over them, I found many really useful and well-made instruments, and some also made more for show than use. Mr. E. Thomas and Messrs. Parkes and Co. had also exhibitions of a similar character. Messrs. Mapplebeck and Lowe were also exhibitors in garden seats and ornaments, and wirework. A large wire rosette, exhibited by Messrs. G. Baker & Co., stood in the centre, being neatly decorated with plants for the occasion. Messrs. Smart Brothers had some very good garden cutlery. Messrs. Batley & Stone, and also Messrs. Griffiths & Browlett, exhibited the hydropunt, which I found easy enough to work, especially that exhibited by Messrs. Pumphrey, which, I

think, is as good for conservatory work, and may be bought at a lower price. A number of wire garden-stands, filled with plants, were exhibited by Messrs. Mapplebeck and Lowe.

Artificial flowers were there too, showing great skill and delicacy of touch on the part of those who fabricated them. A beautiful case was shown by Mrs. E. F. Howe, of Birmingham; and those of Mrs. James Stoddard were perfection, being modelled out of rice paper, and all looking exceedingly natural. There was also a case of fruit modelled from some that were shown last autumn. They were of immense size, and exact imitations of the natural fruit. Both artificial fruit and flowers were exceedingly well done, and reflected great credit on those who made them.

To do justice to such an Exhibition as that held at Birmingham a thorough inspection must be made, and it is well worth the time.—F. CHITTY.

APHIDES AND TWO OF THEIR ENEMIES THIS SEASON.

HAVING noticed in the public papers of last week an unfavourable account from the Hop-growers in consequence of the prevalence of the aphid or green fly, I beg to offer the following brief remarks for their encouragement especially, as well as of horticulturists and agriculturists in general:—

Up to the present time, in this locality at least, the aphid has proved exceedingly injurious both to Gooseberry and Currant bushes, and, indeed, to trees and shrubs generally; but it is gratifying to be able to state that the larvæ of our old friend the lady-bird (*Coccinella*) and the larvæ of the hovering fly (species of the *Scæva* genus)—and especially the latter—are busily engaged in devouring all the various species of aphid; and I have no doubt, in a week or two, they will make such a clearance of these pests that there will afterwards be little or no cause of complaint.

These little friends of ours, but enemies to the aphid, have made their appearance much later than usual this season, in consequence, no doubt, of the cold spring we have had.

For the information of those who may not be aware of the utility and importance of these little fellows, I will give a brief description of one of them.

The lady-bird is generally well known. Its larvæ will rarely be noticed except by close observers, for it is in that state generally amongst its prey, exceedingly ugly, rough, and of a dark brown colour. The perfect insect feeds very little in comparison to the larvæ.

The hovering fly, or perfect insect of the *Scæva* genus, is two-winged, the most usual species being a little larger than the common house fly, thicker, and with longer wings and body. They are distinctly marked round the body with stripes of black and buff. They are mostly seen in fine warm weather steadily hovering amongst plants, then darting right and left. There are several species, some very small, but they are all valuable. The larvæ of those mostly seen are something like leaches in miniature, very soft and flat, of a buff colour slightly variegated, and about the size of the maggot of the flesh fly. After feeding, the chrysalis is generally formed amongst the leaves and plants on which the insect feeds.—JOSHUA MAJOR, *Knottorpe, near Leeds*.

ON COTTAGE GARDENS.

THE advantages of the allotment system, or division of land into gardens of the size required by cottagers, are now so generally recognised, that it is scarcely necessary to advocate its adoption. While, however, nearly all are agreed respecting the benefits the system confers on the poorer classes of the community, its influence for good on the more affluent has, I think, been in a great measure overlooked. The farmers, for instance, who at one time were much opposed to its introduction in our country parishes, on the supposition that the possession of gardens would render the labourer too independent of his employer, have, for the most part, discovered that the independence it has created is of a kind with which they are not disposed to find fault—independence from relief obtained through the poor-rates. We have not indeed quite come back to those happy times—if

ever they existed elsewhere than in the realms of poetry—when “every rood of ground maintained its man;” but, if cottage gardens continue to multiply throughout the land, we shall soon reach a state of things where every rood of ground maintaining its pig will contribute greatly to the maintenance of the pig’s owner and family.

But if the distribution of small portions of land among the labouring classes of agricultural districts proves a benefit to the large land-owners and the farmers, it is especially beneficial to one individual in every parish, whose influence for good over those among whom he is placed it is most desirable to extend—I mean the incumbent or the minister appointed as his substitute. The experience of the writer of this article may perhaps be admitted as an illustration of the fact.

About eleven years ago it was his lot to be appointed to the incumbency of a somewhat populous parish, situated in one of the most agricultural districts of the midland counties. There are now, he most sincerely trusts, few parishes in England in so neglected a state as that in which he found the village of —. There was no trace of any previous incumbent having resided there; and, indeed, it had no house for him to reside in. The land was almost entirely in the hands of large absentee proprietors; Dissent almost universally prevailed; and the place was notorious throughout the country for dissipation and deeds of violence.

To be instrumental in effecting a change in the moral aspect of the place was, of course, the earnest wish and endeavour of the writer; and though, even at the present time, he is painfully conscious that much still remains to be done, he thankfully acknowledges that a large amount of good has been effected, and for this good he is in a great measure indebted to the allotment system. It will perhaps conduce to clearness if, in detailing the means by which that system was carried out, and the general mode of its operations, he should now speak in the first person.

The most important thing to be done was naturally to build a parsonage, and thus to secure, both for the present time and the future, the residence of a clergyman in the parish; the second was to devise some plans for the gradual improvement of the parishioners. I have said that nearly all the land was in the hands of proprietors who lived at a distance from the source of their income, and who contributed in nothing to the welfare of their numerous tenantry. Among these absentees had hitherto been the former incumbents, who, as the tithes were commuted for land, were, for the period of their incumbency, land-owners of some importance. The probably permanent residence of this land-owner was now at all events secured; and it appeared to me that the possession of land might be turned to good account for the purpose of assisting in the amelioration of the position of the working classes. Land, even to the extent of a rood, or a quarter of an acre, was scarce among these, and in so great demand, that as much as £1 yearly rent was gladly given for so small a quantity, the rates and other taxes upon it being paid by the tenant. A suggestion which, shortly after entering the parish, I one day threw out to a labourer—that if a field was divided into cottage gardens, it might prove beneficial to himself and those in a similar situation—was soon repeated; and the news of the possibility of such an occurrence spread rapidly over the village, affording for the time a subject for gossip of a less hurtful kind than that which is too often the established means of entertainment in small communities. Two or three days after I received a petition signed by nearly all the labourers and working men of the place, which as it may prove a curiosity to some of my readers, I literally transcribe:—

“To the Rev. ——— Vickar.

1852.

“We the undersigned poor of this parish do Earnestly beseech your favour to allot a portion of Land to each of us The undersigned which we shall esteem it a great favour by so Doing at any Reasonable Rent you think will do us any Good By so doing we shall remain your obedient Servants.”

Here follow the signatures of forty-nine labourers and artisans.]

The day after a supplement to this petition was sent me, with some ten or twenty more names appended to it.

However ungrammatical this composition might be, its

brief and simple earnestness spoke eloquently to my feelings, and a favourable reply could alone be given by one who was a well-wisher to the petitioners. There was a field, or close, as it is locally denominated, containing somewhat more than twelve acres of excellent land, conveniently situated for the purpose required, and forming part of the glebe. This field I divided into forty-seven allotments; which were distributed by the drawing of lots among those whom I considered the most deserving and the most in want, of those who had signed the petition. My object in having recourse to the method of drawing lots for the distribution of the gardens was to prevent any discontent which might arise from some portions of the field being deemed better than others. The price of each allotment was fixed at 12s. 6d.—the landlord paying all rates and taxes due upon it, and the tenants keeping the hedges and ditches in a proper state of repair. A few short and simple rules were printed and given to each tenant. I do not transcribe the rules, as they are, for the most part, the same as those laid down in similar instances. One deviation, however, from that similarity may be mentioned: no condition is made that holders of gardens should be regular church-attendants—my motive in omitting that usual condition being that, as many of them had been brought up in the principles of dissent from the Church, I did not wish it to be supposed that a premium was held out to them for the performance of a duty, which by other and better means I hoped in time to make them fulfil. Experience has not caused me to regret the absence of such a regulation. Indeed, on the subject of rules in general in connexion with allotments, I would remark that it is my belief, that the less stringent and the less numerous they are, the more efficient as well as the more acceptable they will be found. For their own sakes the tenants will nearly always cultivate the gardens in a proper manner; and, after all, good crops are the best tests of good cultivation.

It may farther be stated that the allotments are at the present time occupied by thirty-four agricultural labourers, four shoemakers, two blacksmiths, two carpenters, two bricklayers, two machinists (workers of steam threshing-machines), and one small shopkeeper.

The result of ten years’ experience of the working of the system may now briefly be detailed. I shall begin by observing that though the payment of rent is required but once a year—about three or four weeks after harvest (September 25th), a time when nearly all the crops have been removed from the field—I have almost invariably received the whole rent on the day appointed, and in no case have I ever lost any portion of it. I have, indeed, frequently encouraged the deserving and assisted those in need by returning to them a small part of the payment; in one case only have I remitted the whole, and that was one of great necessity; but every remission of rent has been granted of my own accord and without any solicitation from the tenants. Last year, with these deductions, the receipts for the forty-seven gardens were £27 14s. 6d., instead of £29 7s. 6d., the full amount. In the year 1857, a year in which there had been some distress among the agricultural labourers, it was £26 7s. 6d., the smallest annual payment since the establishment of these gardens. But it must be added that the rent previously paid by the farmer who had occupied the field before its division into cottage gardens, was only £15; or, taking into consideration that he paid the rates and taxes upon it, about £17.

The cultivation of the garden has, on the whole, been very satisfactory; it may even safely be asserted that the produce of the field is more than double what it was when it formed part of a somewhat large farm. The profit made upon each garden varies of course with the degree of cultivation, and is in every case difficult of estimation; but that a fair profit is made is evident from the circumstance that only two gardens have as yet been voluntarily given up, while there are ten or twelve applicants for the first vacancy which may occur.

The best result of the system has apparently been the habits of economy which it has tended to create. Money, which too often before found its way to the ale-house, is now expended in the purchase of a pig or in seed and manure—more manure being generally required for each garden than can be produced in the pigsty. I may here

mention one curious consequence of the cottagers in this village having nearly all a garden—a consequence which certainly was not anticipated when the allotment-scheme was introduced. Owing to the large quantity of cattle and horses kept by the farmers, hundreds of cartloads of farm-yard manure are carted-out along the highways during the winter season. Traces of the passage of the carts used to be disagreeably manifest to the wayfayer, and much that might have contributed to the fertilisation of the soil was converted into a public nuisance. At present the value of the fertiliser is too well appreciated for even a few shovelfuls to be left upon the road; a pleasing sight may almost daily be witnessed of small children, with their minute spades and wheelbarrows, gathering up the hitherto-wasted fragments for the increase of the muck-heaps in their gardens. Indeed, a more efficient band of little scavengers than that which the allotment-system has called into existence could not easily be found.

Enough has perhaps been said to show that in the parish of—, at least, garden allotments have proved a powerful auxiliary in ameliorating the condition of the agricultural poor; and the temporal improvement of that class of the community is intimately connected with their spiritual advancement. Indeed, whatever tends to raise the condition of the poor, places them in a favourable position to be influenced by the teaching and example of those whom Providence has placed in a superior station of life, and who desire to make use of the advantages that station gives them, to further the well-being, both temporal and spiritual, of their fellow-creatures in the lower grades of society. The poor man must be persuaded that the rich man is a friend, before he will listen to him as a counsellor.

For the purpose of showing that others have derived the same benefit as myself from the allotment system, I quote the words of a writer who has evidently had much experience on the subject, and who has published the results of that experience in an interesting little work, to which I would refer those who desire further information respecting it. It is entitled "*Sketches of Country Life and Country Manners*," by one of the Old School: London: Rivingtons: 1840. "Should the labourer," he writes, "unfortunately be unable to obtain any employment from the farmer, he will, at all events, have sufficient in the produce of his little plot of ground to keep himself and family from absolute destitution, without applying to the parish for assistance until a new demand for his services occurs. And, should a more favourable state of things take place, and the labourer be fully occupied with work during the whole year, the little gains of his allotment will provide him with a few comforts, or become a little store to which he may look in a season of distress or sickness." While cordially approving of these and many other remarks in the work from which I have borrowed these words, I would not be understood as coinciding with the author in all his opinions on the subject of country life and country manners.

Let me also refer my readers to another short treatise, published likewise by Rivingtons, under the following title—"Some account of a system of Garden Labour, acted upon in the parish of Springfield, Essex; by the Rev. Arthur Pearson, Rector of Springfield." The reader will there find an estimate of the nett value or clear gains to the cultivator of one-eighth of an acre; this the author puts down at £1 18s. 2d., or £2 16s. 4d. for a rood. Such an estimate, however, I consider to be higher than the average clear gains in this part of the country, where—as it is one of the most favoured agricultural districts in England—the labourer, it is probable, is more constantly employed than in most others, and has less time to spend upon his own garden. The clear profit here, I have said, it is difficult exactly to estimate; but I believe that it may be fairly stated as not under 35s. or £2 the rood.

From an article in the *Quarterly Review* (vol lxxiii., p. 477), we borrow the following statement, written in the year 1844. "Of all immediate remedies for pauperism, the allotment system offers the most cheering prospects; the experience of almost every one who has travelled in Great Britain will have afforded examples of the benefit resulting wherever land is appropriated to garden culture by the labourer in such small proportions as interfere not with his ordinary duties as a servant to the farmer.

I have now briefly given the result of my personal experience of the advantages arising from the mode, which is yearly becoming more prevalent in England, of distributing to the poorer classes of the community small portions of land at a reasonable rent, and under regulations neither too numerous nor stringent, and have endeavoured to corroborate my testimony of its utility by the evidence of others, who have had a similar experience with myself. My motive in doing so has been chiefly to gratify a wish, often indulged in, to throw into the balance of public opinion the weight, trifling though it be, of a country clergyman's practical appreciation of the good resulting from the measures I have endeavoured to describe. I would, in conclusion, most earnestly urge its adoption on all land-owners, and even on large tenant-farmers, who might, for such a purpose, doubtless readily obtain the sanction of their landlords. But most especially would I advocate a fair trial of it to the beneficed clergy in country parishes, most of whom have more or less land at their disposal. I am very far from asserting that it is the first or the most important improvement to be introduced by a new-comer in a rural district where the temporal and spiritual wants of the inhabitants have been hitherto neglected; but it is my full conviction that it will be found a most valuable auxiliary to all other means of improvement. Indeed, in one respect, it has a prominent advantage over most other modes of benefiting the poor; an advantage which the minister of the parish—who has often a great portion of his income to spend in objects of charity—will duly appreciate. It will be found as profitable to himself as it is to others; and, while obtaining a higher rent for his land, he will also, for the most part, have a more thankful and contented class of tenants than if he had let it out in larger quantities to two or three farmers. Like mercy—to use the well-known words of our great national poet—the allotment system proves itself "twice blessed," for "it bleaseth him that gives, and him that takes."*—(*Macmillan's Magazine*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

ERADICATE all seed-weeds before they shed their seed; pull them up by hand, as cutting them up with the hoe, and allowing them to remain on the ground, is nearly as bad as letting them stand; for although the seed may not be ripe at the time, the sun will soon mature it. We allude particularly to Groundsel, Shepherd's Purse, and Sow Thistle. Broccoli, finish planting-out these and Winter Greens as speedily as ground can be obtained; for unless the autumn should prove very favourable those planted after this time will not attain much size. *Cauliflowers*, the main crop for autumn to be planted on a rich piece of ground. This vegetable, when planted at this season, becomes useful after the Peas are over. *Celery*, pay strict attention to the early crops; let them be gone over with the hand, and all the offsets taken off, and, if convenient, let them have a thorough drenching with dung water, after which, on the following day, give a slight covering of earth to prevent evaporation; it should be remembered that this plant in a state of nature is an aquatic. *Cabbages*, make a sowing of East Ham for early spring use, and the last sowing of Coleworts. *Endive*, plant it out on very rich soil. *Lettuces*, thin and transplant a sufficient quantity for use. Keep them watered during the continuance of dry weather. *Parsley*, sow immediately. If any has been left for seed let it be gathered as it ripens, or the best of it will be lost. *Peas*, earth and stick the advancing crops. *Radishes*, the Black and White Spanish to be now sown for winter use; also sow the common kinds for successional crops. *Spinach*, a good breadth to be sown. For the northern counties the Flanders should be substituted for the Round-leaved; but it is time enough for the former more south. *Strawberries*, dig down exhausted plantations, and plant the ground with Winter Greens. Use all diligence in filling-up vacant pieces of ground as they become available with Broccoli, Borecole, Brussels Sprouts, Coleworts, &c.; and where ground is scarce crops likely to come

* Much valuable information on the "Allotment System" will be found in a very well written article on the subject in the first vol. of the first supplement of the *Penny Encyclopædia*. Also in *Chambers' Edinburgh Journal*, New Series, vol iv., p. 101.

off soon should be interlined for the purpose of establishing as large a breadth of these useful vegetables as can be done.

FLOWER GARDEN.

The progress of all mass flowers to be attended to with unflinching care. In shortening-back shoots that incline to extend beyond the edges of the beds, avoid the least appearance of formality by thinning-out the under shoots, and keeping all parts of the beds of equal depth or thickness. Climbers on walls to be attended to as they advance in growth, keeping the young shoots neatly tied-in, &c. The climbing Roses will also require to be gone over occasionally for the purpose of cutting off decayed blooms. Phloxes and other herbaceous plants to be neatly tied up, avoiding huddling the shoots together as is too frequently done to save time. Any of the Perpetual-blooming Roses that have flowered very freely to be assisted by liberal waterings with manure water from the stable or farmyard tank. Indeed, too much of this can hardly be given to any of the autumn-blooming varieties. Dahlias will require abundance of water. Disbud and thin-out as the habit and constitution of the plant require it. The Pink-pipings put in early as advised, will now be ready for transplanting, and if so, let it be done at once, as they will require time to establish themselves so as to prevent frosts from injuring them. If the situation ultimately intended for them is vacant, they may be planted there at once; but if occupied at present by something else, let the young Pinks be planted 4 inches apart on reserved beds in an open situation, the soil to consist chiefly of light loam and well-rotted dung, to which may be added some charcoal dust, or charred refuse. Finish the laying of Carnations, Cloves, Mule Pinks, &c., of which there is rarely an overstock.

FRUIT GARDEN.

A systematic application of the principles of pruning should be continued to fruit trees during the summer and autumn months. The tendency to excessive luxuriance renders the operations of disbudding, stopping, and shortening shoots more particularly essential. In the first place it is advisable to pinch-off all young shoots not necessary for the framework of the tree; secondly, to stop those shoots which threaten to overgrow their neighbours; and, finally, having commenced a system of repression, to continue it with the lateral shoots which are developed by this system of stopping. If root-action become too powerful, root-pruning may, in the proper season, be practised with advantage. Strawberry-runners to be looked after either for pot-culture or for plantations. In consequence of the continued dry weather wall trees will require watering, or the fruit will drop prematurely. One thorough soaking will be sufficient to prevent any further mischief at present from drought if they are afterwards mulched.

GREENHOUSE AND CONSERVATORY.

Camellias, whenever the young wood appears to be ripening, may be removed to the open air. They thrive best in the shade, and a situation shaded from the midday sun and sheltered from high winds should be secured for them. Be careful to place them on a dry bottom to prevent the possibility of worms getting into the pots. Chinese Azaleas, which are equally forward in their growth and have formed their next season's flower-buds, may likewise be turned out; but, unlike Camellias, they require full exposure to the sun and air, and should be placed in an open situation that their wood may become thoroughly matured. It will be prudent, however, to place them for a week or two in a partially shaded situation, to harden their foliage sufficiently to bear the full sun, or the sudden change from a house to bright sunshine might cause their leaves to turn brown and burn. Calceolarias and Cinerarias to be shifted as they require, and kept cool. Heaths and New Holland plants to be freely exposed, especially at night, guarding only against heavy rains. Water regularly and copiously. Shift, top, and train as necessary. Expose succulents freely to the light. Remove Cacti which have completed their growth to a dry airy place. Cut down Pelargoniums when the wood is ripe after blooming. When cut down to be placed in a shady situation until the most forward young shoots are an inch long, then to be shaken out and repotted into small

pots, using sandy loam and peat. Afterwards place in a cold frame until they begin to grow again, when they may be fully exposed to the weather until the approach of frost renders it necessary to house them for the winter.

PITS AND FRAMES.

Commence the propagation of stock for next season, to secure strong well-established plants before winter and without the necessity of keeping them so close and warm as to induce weakly and watery growth. W. KRAKE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

As we could water very little, did what we could to prevent crops being burned up. Think we will manage for another eight days, will then be at our wits' end as to nice succulent Lettuces, Cauliflowers, and even Peas. The extreme brightness of the sun, and dryness, will also tend to break in on our contemplated succession of crops; but we must just do our best. Shaded Lettuces, Cauliflower, Celery, &c., with branches that had previously been withered. These will do something to break the force of the sun's rays. Watered some young Lettuces intended to stand where sown. Planted-out Lettuces, and cut-in the side leaves considerably before doing so. "What a Goth!" we hear some reader say; "the more leaves the quicker would the plant be established." We grant the fact, if you could protect and shade, and make an interesting patient of every Lettuce plant. The more leaves kept from flagging the sooner will a plant or cutting root and establish itself. But it is the flagging that is the drawback, and the more and larger the leaves, the greater the likelihood of flagging and dying in such weather as the present. Not only so, but all Lettuce ground where planting is resorted to must be pretty rich, and, therefore, worms and slugs may be expected; and these will either pull the flaccid leaves into their holes, or feed on them as they lay withering on the surface of the ground. We, therefore, cut off a few of the largest of the leaves before planting, so that the plant may stand up boldly, and thus be so far free from the attacks of worms and slugs, and also from the reduced surface for evaporation there will be less necessity for repeated waterings. In all such weather, however, much labour may be saved by sowing such crops thinly, thinning-out, and leaving the plants to perfect themselves where sown. Such plants can cater for themselves in a way which transplanted ones cannot do for some time. Once get them fairly started, and dry weather is of less importance to them. They need little or no watering, as, however dry the surface, moisture will reach them from great depths. The mere damping of the surface would arrest the rising of moisture in the shape of vapour to be caught by the roots as it passed them. A rough surface, though to a certain extent it would arrest rapid evaporation from the soil, would not impede the rising of moisture by capillary attraction from beneath, as a mere wetting of the surface would do. That mere drizzling never reaches the roots, and does more evil than good, as it arrests the rising of moisture from beneath until it is itself all evaporated, and the usual course of evaporation is brought into exercise. From this great source of moisture in the bowels of the earth, fresh-transplanted plants in summer receive little or no benefit whilst the surface is moist, and it must be pretty moist, unless we plant with great balls. Hence it will be seen that even the best rules as to planting may be broken at times with advantage. Watered early Celery to prevent it bolting, and covered with half an inch of dry earth. Must wait for a change of weather before we can plant out any more. A man with a stream at hand need not wait, for he has water ready. When plants with fine balls can be raised, we do not like to injure a leaf. When that is not the case we would be inclined to dock them a little, to lessen the perspiring surface. Hoed and forked amongst growing crops; cleared the ground of early Cauliflower and Peas, and prepared for digging for fresh crops. Watered beds of Endive and Lettuces, and sowed more, also Spinach, Turnips, Radishes, and Dwarf Kidney Beans, where we shall be able to give a little protection in autumn. Other things much in routine.

FRUIT GARDEN.

Thinned late Grapes. Tied-in Peach-shoots. Watered and regulated Figs, Cherries, &c. Layered Strawberry-runners. Thinned and stopped shoots of fruit trees, as previously stated. Planted-out late Melons. Cut-back the first bed for a second crop. The second bed had been too much punished with bearing and rather dry to do much more good, so moved plants out, and part of soil to 2 or 3 inches deep. Cleaned the frame, painted with sulphur inside, and planted with strong young plants. We have also put some where a little fire heat can be given in the autumn. Successions come in well. Strawberries are suffering considerably from the drought. Even the blackbirds seem to care less for the fruit, as it has become more saccharine, and is less juicy. The crops on the whole have been good. We have noticed the trouble that some people have to obtain a crop; but it is in general all their own fault. A friend of ours has a large bed, but he scarcely ever has any fruit. He had manure water and litter at command. No plants could have bloomed better, and the bloom was perfect; but for want of the water and the litter the large crop shrivelled up. We have instanced several cases in which sterility was owing to extra and late encouragement to growth, by which fine plants were secured with soft flabby buds. We know it is often difficult to procure good crops on light land, and we approve of the plan recommended by a correspondent of adding clay to such soil. We have, however, seen fine crops secured by a simpler process still. The ground was well manured and well dug, and the plants put in in the usual way, after the ground was well rolled and trodden. As soon as the plants were fairly established the ground was beaten firmly about them with large beetles when it was in a rather wet state, and then the hard firm ground was slightly littered over with half-rotten dung, and a thicker coat was put on early in spring. We never saw plants do better; the leaves were large, on short footstalks, hanging close to the ground, instead of tall staring things.

This just reminds us that no rule, however good, should be too hard driven. One of our rules as to Strawberries is to enrich the ground, dig it well, and after planting never to put a spade in it until the plants are dug down. Another rule is never to cut away a Strawberry leaf from a plant we wish to remain and be fertile, except perhaps a few dead ones at the spring-dressing. This answers well with us here, and we should look on such an operation as mowing the tops of our Strawberry-beds early in the autumn as something barbarous—quite as bad as cutting over a quarter of Asparagus in the beginning of August. But holding that idea, we must say that we have seen the scythe used in a Strawberry-quarter with very good effect. In very light soil the foliage comes long and lanky, it is frequently all spotted and brown before the fruit is all gathered, and therefore the wasted foliage cannot elaborate for the buds of the following year. When neatly cut over early a fresh batch of green leaves is produced; and these so grow and flourish that ripened and far better buds are produced on compact fresh plants before the end of autumn than ever could have been produced from the old, spotted, half-dead leaves. Only in such circumstances would we sanction the scythe or the knife; but even on such soil we shall be surprised if such a practice is much needed if the firming process is resorted to. Thus rules must bend at times to suit cases and circumstances.

ORNAMENTAL DEPARTMENT.

Potting hardwooded and softwooded plants, training flowers in beds, keeping clean, and the general routine much as last week, which sec. Our labour is greatly regulated by the scarcity of water, and moving our rough surface presents a fresh point for the sun to act upon, and so far breaks the line of evaporation and conduction without doing much to prevent the free rising of moisture from beneath. We have been obliged to water some Calceolarias that were showing signs of distress, as they are heavily loaded with bloom. Geraniums are standing the drought nobly as yet.—R. F.

EXTRAORDINARY FROST.—On the night of Saturday last the thermometer near London fell to 27°, or 5° below freezing, a temperature which we believe has never before been registered in July.

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

CHERRIES FALLING IN AN ORCHARD-HOUSE (Observer).—Your Cherry trees are, from your description, of the Bigarreau race, and your house being "forced on early in the season," the blossoms drop from the pollen not setting. Bigarreau Cherries are most impatient of heat when in bloom, and do not force well. You should remove them and plant May Dukes, but with them much care is required when forced. They should have abundance of air when blossoming.

GUANO LIQUID MANURE (J. C. Muckross).—For plants in pots half an ounce of guano to a gallon of water; for plants in the open ground one ounce of guano to the same quantity of water.

PLUMS IN POTS (An Irish Subscriber).—There is either a defect of action at the roots or you keep your orchard-house too close. What is said in answer to another correspondent to-day relative to his Cherries falling may be suggestive as to the cause of your Plums becoming yellow and falling.

SPOT IN GRAPES (G. M.).—The berries of your Massat Grapes are unquestionably affected with the "spot," a disease which we consider has no connection with exposure to the light. Try removing the soil down to the upper roots, replacing it with a mixture of light loam, limy rubbish, and thoroughly-decayed stable-dung, giving also copious waterings with tepid water.

BERRIES OF COCONASTER AND PYRACANTHA (F. P.).—They are not tempting in flavour, but we should certainly say that they are not poisonous. The *Crataegus pyracantha* belongs to a genus, the berries of which are really palatable. Formerly both *Cocconeaster* and *Pyracantha* were included with the Medlar in the genus *Mespilus*.

WHITE CURRANTS (Lee).—The White Currants you saw in Covent Garden were the White Dutch. They are produced by being grown in a fine strong loam, and by the trees being pruned on the spur system.

NAMES OF INSECTS (T. Morgan).—The Black Pincher is a species of ground beetle (*Harpalus ruficornis*), and is no doubt beneficial in gardens and fields, by destroying and eating worms and other soft-bodied insects.

W. (Bee).—It is the *Sirex gigas*. The appendage to its abdomen is used for boring into Fir trees for the deposition of its eggs.

HORSE-DUNG FOR MUSHROOM-BEDS (C. P., Wigan).—We would recommend horse-droppings that have been collected four months and dried in the shade, without any litter amongst them, to be mixed with at least one-third of their quantity of fresh dung.

THRIPS AND RED SPIDER ON GRAPES NEARLY RIFE (A Many-years Subscriber).—Fumigate the house with the best shag tobacco to destroy the thrrips; paint the walls at the top of the house with sulphur, and the hot-water pipes also if they are the source of heat, but not a flue. Put a sharp fire on at night, opening the windows early. If you dislike using fire, slack 2 or 3 lbs. of fresh lime in a pail, and when pretty well slacked, mix with it half a pound of sulphur. Were we in your case, we would go over all the worst leaves with a sponge just moistened with soap water, so that the insects would stick to it, and there would be no danger of any dropping on the bunches. A man might thus soon clean a house, especially with the help of the sulphur fumes. The sponge is the safest application.

CLIMBERS FOR GREENHOUSE (J. P.).—Presuming that you wish for climbers of short duration, as you have named *Tropaeolum canariense*, the following, in addition, will give abundance of flowers:—*Thunbergia alata* and *T. alata alba*, *Tropaeolum Lobbianum* Brillant, *Lophospermum Cliftoni*, and *Maurandya Barclayana*. We should prefer some of the more-properly-speaking greenhouse climbers, for most of the above are hardly worth house-room, as *Hibbertia grossularifolia*, yellow; *Jasminum gracile*, white, and sweet-scented; *Kennedyia inophylla*, and *K. monophylla*, blue; *Rhynchospermum jasminoides*, white, very sweet; and *Kennedyia coccinea*, red. All these will do well in nine-inch pots, with ordinary greenhouse temperature.

EVERGREEN BERBERIS (G. M.).—Your border will just suit *Berberis*. Trench the ground if possible, and then work in, as your soil is light and poor, a liberal dressing of well-rotted manure or leaf mould. You will hardly be able to have more than two rows in such a narrow border, 4 to 5 feet. In the back row plant *Berberis canadensis*, *B. dealbata*, *B. Fortunei*, *B. Leschenaultii*, *B. empetrifolia*, *B. heterophylla*, and *B. dulcis*, all of which attain 4 to 6 feet, and that is the distance they should be planted from plant to plant in the row. In the front row *B. Darwinii*, *B. asiatica*, *B. Beali*, *B. japonica*, *B. nepalensis*, *B. sinensis*, *B. trifoliata*, and *Mahonia aquifolia* should be planted alternately with the plants in the other row. The plants should not be less than 2 feet from the edge of the bed, and the same between the rows, so that your border should not be less than 6 feet wide. One row of plants is ample for a bed 4 feet wide; but two rows look better than one, and three are better still, especially when the centre is planted with the taller, and the outside rows with the dwarfier kinds. Any time between October and March in mild weather is the proper time to plant them. All the pruning *Berberis* require is to cut away in early summer any straggling shoots and such as are weak and old. They will need copious supplies of water the summer after planting in droughty weather.

SALT FOR MILDEWED VINES (J. A. J.).—We do not think the salt would injure the Grapes, but we would not run the risk, since it is established beyond controversy that flowers of sulphur applied thoroughly is a specific for the Vine mildew.

CROSS-BRED GERANIUM (*Christine*).—We can form no opinion from the parts you enclose, nor should we conclude anything unless we could see the plant, or, at least, an entire flower.

ANSWERS TO CORRESPONDENTS (*J. M., Londonderry*).—You are "disappointed" because you are unreasonable. Your question reached us on Monday, the very day we go to press, and it was not possible to insert an answer. No query can be sure of a reply in the next Number of our Journal unless we receive the query in the first half of the week.

NAMES OF PLANTS (*A. E.*).—1, *Blechnum spicant*; 2, *Lastrea dilatata*; 3, *Lastrea Filix-mas*; 4, 5, 6, *Athyrium Filix-femina*. (*A. Cockney*).—1, *Hyssop*; 2, *Savory*; 3, *Pennyroyal*; 4, *Balm*. Any gardener or cook could have told you these names, and we ought not to have our time occupied thus needlessly. (*Alpha*).—All the specimens imperfect; but we can just make out, 2, *Stachys sylvatica* and, 4, *Sisymbrium officinale*. (*W. L.*).—We have often said that we cannot undertake to name many plants from one correspondent. So out of yours we name—1, *Taxodium distichum*; 3, *Ceanothus americanus*; 4, *Spiraea filipendula*; 5, *Ruscus racemosus*; 12, *Ornithogalum scilloides*; and, 13, *Acorus calamus*. (*W. L.*).—No letter or any writing came with the specimens. Three or four perfect specimens in a card-box with a little damp moss to keep them fresh is what we desire. Numerous dry specimens we have no time to examine.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CHILLED EGGS.

IN reply to your remarks and "Evesham's" as to eggs chilled during hatching, I must with all deference and with much diffidence object to your idea that the hen being off her nest several hours at so early a period in the sitting was sufficient to destroy the vitality of the eggs.

I once sent in the evening some miles for a promised sitting of eggs. They were laid by a *Cochin* hen running with a *Minorca* cock. When my messenger arrived, he found they had that morning been placed under a hen. They were, however, removed, and he brought them to me, of course quite cold. I think I had ten chickens out of that batch.

I look, however, on the general habits of broody hens as telling more against your opinion than even my case above. It is a popular notion, with perhaps a good share of truth in it, that stolen nests are most productive; and those of us who have watched hens know, that for many days during the laying of the last three or four eggs, the hen is often several hours on the eggs and then off again for as many, thus placing these eggs frequently in the same position as "Evesham's," yet they hatch. At this early date there is no real vitality in the egg. Indeed, until the appearance of blood on the third day, comparatively little change takes place to the eye of a careless observer. So many authenticated cases of success after chilling having occurred, it is wise to persevere if eggs are of value.

Can "Evesham" be certain that eggs from the same yard about the same time prove fertile? Are eggs of *Sebright Bantams* of less vital power?

I have this year hatched a great number of eggs that had been greased to keep them fresh; the lard, though keeping an egg beautifully fresh for months, is easily wiped off, and does not then interfere with the admission of air into the egg.—Y. B. A. Z.

IN April, 1854, No. 291, Vol. XII., I gave you an account of a hen having left a sitting of eggs on the twenty-first day, and that on the twenty-second day part of the eggs were placed below another hen, after having been deserted for more than twenty-four hours and becoming quite cold, and that on the twenty-sixth day five birds were hatched, and on the twenty-seventh day three more were added to the stock. In the Number above referred to there are communications from six different individuals giving instances of eggs being chilled from six to twenty-four hours.—J. T.

SEVERAL inquiries as to the time for which eggs might be left during sitting without vitality being destroyed, I beg to mention the following fact. Five eggs (*Silver-spangled Hamburg's*), were put under a *Bantam* hen, which deserted them after about a week. They remained certainly twelve, and so far as I remember, twenty-four hours, and were, of course, quite cold, when another *Bantam* hen took to the nest. I broke one egg, and, seeing some slight motion in the embryo chick within, I left the other four eggs, of which three have just been hatched, twenty-two days after the first hen commenced sitting.—W. E. T.

SELBY POULTRY SHOW.

A POULTRY Show in connection with the tenth annual meeting of the Selby, Tadcaster, and Market Weighton Agricultural Society was held on the 10th inst. at Selby. Notwithstanding the excessive heat, the thermometer being at 86° in the shade, to the great distress of the poultry, the ground was crowded with visitors from the opening to the close of the Show. The birds this year excelled both in number and quality those exhibited at any previous meeting of the Society, so that, altogether, we may congratulate the Society upon the success of their Show at Selby. There is one point in which the Society has room for improvement—viz., the pens provided for the reception of the birds, many of which evidently want renewing, being in a very dilapidated condition, so much so that they proved only insecure receptacles for the birds. The frequent escapes were a source of great annoyance to exhibitors.

Spanish were first on the list, Miss Beldon taking first with an excellent pen. The prize for *Spanish chickens* was withheld. Old *Dorkings* were a good class, though the one for *chickens* of this variety only produced two pens of average quality. The *Cochins*, mustering eleven pens, were better this year than at any previous Show. Messrs. H. & G. Newton had an easy walk over for the first prize in old birds; there was, however, some good competition for the second, which these gentlemen also eventually secured, still continuing their success by taking both first and second in *chickens* with very promising *Buff* birds. The *Game* classes were rather below the average, the great *Game-breeder* of the district, Mr. Adams, not being in competition. At this Show there are no classes for "pens" of *Game* (except *chickens*), but only for single *Game* cocks and for pairs of hens. Miss Beldon well deserved her first position in both classes. In the *Hamburgs*, as will be seen from the prize list, Mr. James Dixon maintained his reputation as amateur of these beautiful varieties, by taking the bulk of the prizes offered against very strong competition. Good *Black Hamburgs* and *Brahmas* were the prize-takers in a large *Variety* class. In the *chicken variety* class, *Dorkings* were first (notwithstanding the class for *Dorking chickens*!) and *Black Hamburgs* second. In *Bantams*, *Laced* took both prizes—Gold first, and Silver second. In the class for Any variety of single cocks (mustering twelve pens), the first-prize bird was a very fine *Dorking*; the second, an equally fine *Buff Cochin*. In pairs of hens, *Spanish*, followed by *Polands*, had the honours.

The *Ducks*, *Geese*, and *Turkeys* were strong both in number and quality. We cannot omit mentioning Mr. Young's first-prize *Aylesbury*, which would have done credit to any Show.

SPANISH.—First, Miss E. Beldon. Second, T. C. Trotter, Sutton Hall. Commended, T. Liddall, Halifax.

DORKINGS.—First, R. M. Stark, Hull. Second, O. A. Young. *Chickens*.—Prize, T. E. Kell, Wetherby.

COCHIN-CHINA.—First and Second, H. & G. Newton, Garforth. Commended, E. Witty, Cottingham. *Chickens*.—First and Second, H. & G. Newton. Commended, O. A. Young.

MALAY.—First, Miss Beldon. Second, O. A. Young.

GAME—COCK.—First, Miss Beldon. Second, H. M. Julian, Beverley. Commended, J. Baxter, Barby. *Hens*.—Prize, Miss Beldon. Commended, H. M. Julian. *Chickens*.—Prize, O. A. Young.

PHASANT (Golden).—First, J. Dixon, Bradford. Second, G. Holmes, Driffield. Commended, Miss Beldon. *Chickens*.—First, J. Dixon. Second, O. A. Young.

PHASANT (Silver).—First, S. Campling, Nottingham. Second, J. Dixon, Bradford. Commended, T. C. Trotter, Sutton Hall. *Chickens*.—First, J. Dixon. Second, T. C. Trotter.

HAMBURGH (Golden-pencilled).—First, J. Dixon, Bradford. Second, Miss Beldon.

HAMBURGH (Silver-pencilled).—First, J. Dixon, Bradford. Second, Miss Beldon. Commended, G. Holmes, Driffield.

POLANDS.—First and Second, Miss Beldon. Commended, J. Dixon, Bradford.

ANY BREED OR CROSS.—First, Miss Beldon. Second, H. Lacy, Hebden Bridge. *Chickens*.—First, C. Hutchinson, Selby. Second, H. Pickles, Kirby, Skipton.

BANTAMS (Any variety).—First, Lord Londesborough. Second, Miss Beldon. *Cock*.—First, J. Dixon, Bradford. Second, H. & G. Newton, Garforth. *Hens*.—First, J. B. Heworth, Hatfield. Second, J. Dixon.

GESE.—First, J. Dixon, Bradford. Second, O. A. Young.

DUCKS (Aylesbury).—First, O. A. Young. Second, T. C. Trotter, Sutton Hall.

DUCKS (Any other variety).—First, J. Dixon, Bradford. Second, R. M. Stark, Hull.

TURKEYS.—Prize, R. M. Stark, Hull.

GUINIA FOWLS.—Prize, J. Dixon, Bradford.

Mr. Joseph Richardson, Thorne; and Mr. J. O. Jelly, Acombe, York, officiated as Judges of the poultry.

GAME AND A FEW OTHER BIRDS.

In concluding my articles on birds as regards the good and injury they do, it now only remains for me to glance at those I have not previously noticed: they are the Doves, Game, Waders, and Swimming Birds.

Of Doves or Pigeons we have five wild species—namely, the Ring Dove or largest Wood Pigeon, the Stock Dove, the Turtle Dove, the Blue Rock Pigeon, and the Chequered Dove-house Pigeon. These are all seed-eating birds; their office is that of weeders, and they do a great deal of good in eating the seeds of weeds—much more than is often supposed. That they eat corn and peas when they can get them is quite true; but their feet are not made for scratching, nor are their bills fit for digging, so that they do not do so much injury as is generally laid to their charge. The grain they devour is mostly scattered or imperfectly covered, and, consequently, but a trifling loss.

Under the head Game, I class Quails, Partridges, Grouse, Ptarmigans, and Pheasants. These are also very useful birds in the field, where they destroy an immense quantity of insects, which if left would do a great amount of damage. It is this kind of food that gives the peculiar richness of flavour to their flesh. Of corn they also eat a little, but except where they are kept in too large a number for their natural food, the evil arising from them is not noticeable, but in the neighbourhood of preserves Pheasants often do a considerable injury to the crops just before harvest.

Waders are a numerous family, but rather sparingly spread over the country. I include under this head Peewits, Grey and Golden Plovers, Corn Crakes, Moorhens, and many other birds occasionally met with. Their food consists almost entirely of insects, and they are good friends to the farmer and agriculturist. It is a great pity they are so scarce; but as they are not strictly Game, and excellent eating, we need not be surprised at their scarcity. Some meadows in Kent that used to be much frequented by the common Plover, have much deteriorated in value since the destruction of the Plover's eggs, which are sold as a *bonne bouche* at 4s. per dozen, for since the almost extermination of these birds the daddy longlegs or gadfly have increased to such an extent as to destroy the turf in many places. These birds are the best I know of to keep in gardens for the destruction of many insect pests, but they are rather delicate, and require protection from cats and rats.

The Crane and the Heron are also waders, but the Crane and Stork, Spoonbill, and Bittern, are now very rare in England, while the Heron is also becoming scarce. I do not think he does any good, and the injury he commits is only that of taking a few fish.

The water fowls, as Teal, Widgeon, and wild Ducks, feed mostly on aquatic insects and seeds, and can scarcely do much harm. Wild Geese, like tame ones, are vegetarians; they are not very numerous, and I am not acquainted with any injury laid to their charge.

Sea birds, as Petrels, Turns, Gulls, Cormorants, &c., do not, I think, affect the gardener or farmer, unless it is in assisting to form deposits of guano.

With this I close my brief notices of the good and evil done by British birds, and trust that these papers have not been without some interest to a few of the readers of THE JOURNAL OF HORTICULTURE.—B. P. BRENT.

REMOVING BEES TO THE MOORS.

As the time has now arrived for removing bees to the heather, I wish to remind your readers of the very great advantage a hive taken to the heath has over one that cannot be taken there. It gives the bees at least six weeks longer honey-harvest, and I find my bees not taken to the moors always lose weight after July. The heather, I find, is fast coming into bloom, so that no time should be lost in sending the hives; and if this beautiful bee-weather continue, the quantity of honey collected will be immense, so that the bees should have plenty of room given to them before they are sent.

I will now give your readers a few directions for removing their bees to the heather. The first thing to be attended to is to give the bees plenty of room, as if the weather is

favourable they collect from the heath a very great store of honey; so the day before I remove them I place another hive on the top of the stock, when I want to join the bees on their return home to another stock and appropriate to myself the whole of their store of honey, or if I want to take the old hive from the bees and leave them in the new hive. If I want the bees to remain in their own hive I place the addition underneath, as the bees always fill the top hive first and afterwards the bottom one, and the honey in the new hive being deposited in new combs in which there has been no brood is very beautiful, and much more valuable than the honey out of old combs. Where the two hives join I tie a piece of calico securely with two strings round each hive, so that they cannot separate or any bees escape when being removed. I then raise the hives about an inch from the floor-board upon pieces of wood, and early next morning I find every bee has gone off the floor-board into the hive. I spread a piece of net or lino on a board and lift the hive upon it, and tie the net very securely with two strings round the hive, and when so fastened I turn the latter gently upside down and place it on a cloth, and then tie the corners together, so that the hive is easily carried by suspending it by this cloth on a pole across the cart; but it matters very little if suspended or not, as the combs will not break down, the hive being turned bottom upwards. The bees by that means obtain plenty of air, do not melt the combs with their great heat (being excited), and I do not find the honey run out of those cells that are not sealed over, to do the bees any injury. I let the bees remain at the moors until about the middle of September, and when brought home I put them upon the scales, and the next day I deprive them of their surplus stock (leaving the bees, combs, and honey, 20 lbs. weight, which insures their preservation until the next summer); this I consider a proper return from these grateful creatures for my kindness in having given them a change of air in such luxuriant pastures, where many tons of honey are annually lost for the want of collectors.—W. CARE, Clayton Bridge Apiary, near Manchester.

P.S.—This month has so far been a splendid one for bees, the white clover being so very abundant. Many of my stocks have collected upwards of 2 lbs. of honey on several of the days.

BEE-KEEPING IN DEVON.—No. XVIII.

A DWINDLING APIARY.

RATHER more than twelve months ago* Mr. Edward Fairbrother first made inquiry as to bees which had done well one year gradually dwindling away the following spring, and ultimately, as he expressed it, "deserting their hives" entirely. In making this inquiry he stated that his was by no means a solitary instance, and was confirmed in this a fortnight afterwards by my friend "BAR-HIVE," who testified to his having experienced the same misfortune; and whilst declaring it to be a subject of great importance to the bee-keeping community at large, appealed personally to me as being "the very person to unravel this mystery."

In reply to these appeals I did my best in the way of suggestion as to the probable and possible causes of these puzzling failures, gave such advice as seemed likely to be beneficial, and, whilst confessing myself at fault, appealed to others to aid me in endeavouring to throw light on the subject; but to this request no response was made.

Here, then, the matter ended—unsatisfactorily enough, I confess. Unprolific queens were blamed for the absence of prosperity in the hives over which they presided, and Mr. Fairbrother was told, in reply to his further inquiries as to the selection of queens, that this desirable end would most probably be brought about by his attaining sufficient apian skill to breed queens and select them for himself. Now all this was, as I said before, sufficiently unsatisfactory, and I could not but confess that we had eluded the difficulty rather than fairly resolved it. Hundreds of people keep bees, and make them prosper, who never saw a queen in their lives, and are probably ignorant even of the very existence of this important member of the bee community; or, if they have some dim inkling of the fact, they either confound her sex

* Vide THE JOURNAL OF HORTICULTURE, Vol. III., page 187.

altogether and invest her with the title of "king," or they provide her with a prince consort and gravely declare that "there is a king and a queen in every hive." Added to this I may state my conviction that, although there is undoubtedly an immense variation in the breeding powers of queen bees, and that in this all-important point the Ligurians possess a great and unquestionable superiority; yet, as a rule, the full breeding powers of even a common queen are seldom tested to the utmost, and under favourable circumstances nearly every queen I have met with has proved herself equal to the occasion and fully competent to sustain the population of a flourishing colony. I, therefore, take this opportunity of recording my belief that when stocks dwindle away it is seldom through a lack of reproductive power in the queen herself, but rather owing to this power lying dormant through being thwarted in some way by adverse circumstances.

Whilst cudgelling my brains to little purpose in the vain attempt to give a satisfactory reply to the query propounded to me, I little thought how soon Mr. Fairbrother's case would become my own, and that finding myself fairly confronted by the same difficulty, I must either solve the problem or bid adieu to prosperous bee-keeping. Such has, however, been the case this season, which has been to me one of continued worry, vexation, and disappointment, both English and Italian bees having been equally at fault. Had I not already thoroughly tested the good qualities of my Ligurians, I might probably have pronounced them worthless, and had I met with such ill-success on their first introduction, I would scarcely have troubled myself about naturalising them. Thus, then, the matter stands. Although all possessed of young queens, many of them sprung from a race proved to be far superior to the ordinary species, my hives have gone from bad to worse, until some with the purest and most valuable queens have threatened to become altogether extinct, and none approached to anything like the prosperity which they have hitherto attained in far less favourable seasons. All my endeavours to restore weak stocks by the hitherto-unfailing process—exchanging brood-combs with more populous ones, turned out of no avail, whilst I continued to receive the most deplorable accounts of the few colonies I had been induced to part with. Repeated examinations of the interior of my hives led only to the same conclusion, that the queens were in no case in fault, but that comparatively few of the eggs laid by them developed into bees. Setting this down to the account of the cold nights we at that time experienced, it may readily be imagined how I longed for warm, nay, for very hot weather, when no low temperature could exist even in the most thinly-populated hive to interfere with the development of the young larvae.

Thus passed the spring months, until at length in May it became evident that the bees themselves were incompetent to remedy the mischief. Many of the combs had become mere masses of abortive brood, which the bees allowed to remain untouched, apparently overpowered and paralysed by the magnitude of the evil, and I was irresistibly impelled to the conclusion that something must indeed be done. By way of experiment I took one of the worst combs, opened every sealed cell, and by repeated and continued jerks over a sheet of paper succeeded in dislodging a vast quantity of a dark brown slimy matter, from which arose a most unpleasant smell. Having by this means and the use of a damp flannel removed as much as possible of the offensive substance, I returned the comb to the hive, and awaited with anxiety the result of my experiment. Before very long the bees set to work, and having apparently purified the comb, the queen next entered upon the scene, and soon filled it with eggs in the most methodical manner. This, then, thought I, is the right course to pursue. My little labourers are evidently appalled at the magnitude of the task, and if I only lend them a helping hand they will do the rest themselves. I at once set to work: comb after comb was, at the cost of infinite labour, cleared and replaced; and I looked forward with confidence to the time when the development of what I thought must now be healthy brood would replenish my depopulated hives, and enable me once more to rejoice in the possession of a flourishing apiary. In this, however, I was grievously disappointed. It soon became evident that the bees hatched—were even fewer than before, and that at

the cost of so much time and trouble I had only given an impetus to and actually accelerated the downward progress of my apiary!

During all this I had from time to time made a few spasmodic attempts at queen-rearing; but such was the weak state of my colonies, that it was with difficulty any of them could spare a few bees to stock even a small nucleus; and of the royal cells that were formed, so great a number turned out abortive that June was ended before I had raised more than a single queen.

When June was nearly at a close, and I found myself in the same dilemma, I was fairly at my wits' end. I thought of Mr. Edward Fairbrother, and, like him, confessed myself fairly beaten. Never had I met with such a case, or even anything approaching to it; neither could my apiarian friends assist me by suggesting a remedy for what was to them altogether unprecedented. All their bees were in the most flourishing condition; and one in particular fairly told me that he believed he had more bees in one of his Ligurian stocks than I had in my entire apiary. Can it, therefore, be wondered at that, in the bitterness of my heart at this humiliating contrast, I was almost tempted to wish that I had never become—A DEVONSHIRE BEE-KEEPER?

DRIVING BEES.

I OBSERVE in your No. 118, that "A. B. C." has been unsuccessful in driving and transposing. I will, therefore, give him a little of the practice I have had. Last year I drove three hives. One proved successful, but the other two did not; and the next day I was rather astonished at seeing the three hives fraternise, the bees going from one to another. One of them, it turned out, had no queen, and, consequently, it was robbed, and the bees joined the robbers.

Driving does not always succeed, as sometimes the bees will not go out at all, and I find natural swarming is better than artificial; but you may save time and trouble in watching by driving. One of my last year's Ligurian queens not breeding good bees, I put on a drone-stopper, and it appears to have prevented her from swarming, as the bees have come out once or twice, and lately have been hanging out; but last Friday (July 10th), I observed many of them going to the next hive, and no fighting going on. I have, therefore, transferred this hive, and have added a large quantity of bees to a young Ligurian queen. I find bees join better, and with less fighting at the latter end of the season than now. The other day I had a very fine Ligurian queen come off, making the third swarm; and as there was not enough of bees for this time of the year, I fumigated one of the hives that I suspected to have no queen, as there were so few bees going in and out; but I found the queen and destroyed her, as she was evidently no breeder, and then put the swarm into the hive with comb, and joined the bees together. On the next morning I observed a small cluster of bees under the alighting-board, and on looking into them saw the queen, and got her into the hive. She very soon came out again, and I therefore put her with the few bees that followed her into an empty hive, and on going home the next evening was told I had another swarm, but on examination found the hive empty, and also the other hive, showing that the queen and the few bees had left the hive again. I did not find her that evening, but succeeded in doing so early the next morning in the place where she had alighted on the day before, and, therefore, I hived her again, but at night found she had gone, and have not been able to find her since. I fancy the bees would not have her because she would not be impregnated.

Can any of your apiarian correspondents inform me how many days piping may be heard before swarming, as I have a swarm that has been piping for these four days? The people here say it says "out," meaning the old queen has gone.—A. W.

OUR LETTER BOX.

LARGEST BROOD OF DORCHES (M. P.).—The most numerous we ever knew comprised seventeen chickens. The hen had sat herself in the thatch of an outbuilding covered densely with ivy.

WEEKLY CALENDAR.

Day of Week.	Day of Month.	JULY 28—AUGUST 3, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
28	Tu	W. Forsyth, jun., died, 1835. G.	76.0	52.2	64.1	19	19 af 4	54 af 7	12 a 6	34 af 1	13	6 13	209
29	W	Fennel flowers.	75.6	50.8	63.2	15	20 4	52 7	55 6	49 3	14	6 12	210
30	Th	Sea Lavender flowers.	74.8	51.3	63.0	16	22 4	51 7	27 7	18 4	15	6 10	211
31	F	Flax flowers.	74.9	51.1	63.0	14	23 4	49 7	55 7	39 5	16	6 7	212
1	S	Lammas Day.	75.9	51.2	63.5	17	25 4	47 7	20 8	2 7	17	6 4	213
2	Sun	9 SUNDAY AFTER TRINITY.	75.8	52.5	64.1	17	26 4	46 7	42 8	23 8	18	6 0	214
3	M	Saffron Crocus flowers.	74.5	51.4	63.0	19	28 4	44 7	6 9	43 9	19	6 56	215

From observations taken near London during the last thirty-six years, the average day temperature of the week is 75.4°, and its night temperature 51.5°. The greatest heat was 92°, on the 1st, 1848, and 2nd, 1856; and the lowest cold, 34°, on the 1st, 1858. The greatest fall of rain was 1.39 inch.

BOILERS.



N constructing a hot-water apparatus, a good boiler is the first consideration.

In my opinion the merits of a boiler for horticultural purposes, should be

measured in the following order:—1st, It should present a large surface to the direct action of the fire. 2nd, It ought to need little water to

fill it. 3rd, It should be made of a material not likely to wear out soon. 4th, The base or bottom should be double the width of the top. 5th, It should be so constructed that it will not be soon choked with soot, and should be easily cleaned out. 6th, It should be of easy access for being repaired. 7th, It should heat quickly. 8th, It should be easy of management. 9th, Its furnace should burn any description of fuel. 10th, It should require but little attention. 11th, It should be capable of being regulated so as to heat a little as well as a large amount of piping without any waste of fuel. 12th, Provision should be made to clean the inside of the boiler, to keep it clear of sediment.

Some of the points named convey their own meaning, but a few remarks on each may not be out of place.

On point 1st, I may observe that the parts immediately over the fire receive the greatest heat, and those parts ought to be stronger than the rest; but whether the expected saving likely to accrue from thus providing against wear and tear, would more than balance the increased slowness of heating, has yet to be proved. Water in a tin saucepan is sooner heated to a given point than in a copper one; brass is some time longer in heating, and an iron pan longer still: therefore, it is only common sense to imagine a boiler side or bottom half an inch thick would heat the water in contact with it quicker, and a greater quantity, than one double that thickness. I dispute the claims of a boiler to preference because it exposes a large amount of surface to the action of the fire. It would be well to discriminate between direct and indirect action. The parts immediately over the fire I think may be considered direct, and those receiving the flame or heat after it has been in contact with another part of the boiler indirect. The one has double the heating power of the other. The fire in the first place would melt brass (1869°), whilst in the other it would not melt lead (594°). Water, however, cannot be heated to more than 212°, a few degrees more or less according to the pressure of the atmosphere; yet it does not follow that a material capable of being heated by a common fire to a temperature of 1141° (Daniell), will not boil more water in a given time than the same material at half the temperature. A boiler, therefore, exposing 10 feet of direct, and 20 feet of indirect surface to the action of the

fire, will not heat more water to a given temperature than one with 15 feet of surface directly exposed to the action of the fire. It does not follow that a saddle boiler with 12 feet of direct, and the same quantity of indirect surface, will heat as much surface as a tubular boiler with 12 feet of direct, and 48 feet of indirect. The tubular in this case would heat one-third more water than the saddle boiler; but a saddle boiler with 30 feet of direct, and the same quantity of indirect surface, would heat more water to 212° than a tubular boiler with 10 feet immediately over the fire (directly exposed), and 50 feet of indirect surface.

On the 2nd point I need not comment, for it will be evident that a boiler holding but twenty gallons of water will be sooner heated than one holding forty gallons. Large boilers holding a large quantity of water must be wide inside, from one side to the other, but a boiler holding but little water must have its parts narrow. On this point I need not further enlarge, beyond stating that the heating capabilities of a boiler are nearly as much dependant on the water it contains as on the surface exposed to the action of the fire. A boiler holding forty gallons of water cannot be so economically heated as a boiler holding but twenty gallons, both having the same amount of heating surface. The former gives heat where it is not wanted, in the boiler, the other in the pipes within the house required to be heated.

I may observe on the 3rd point, that the best metal adapted for boilers appears to me to be cast iron. Water prevents metals from being heated to their highest extremes. For instance: lead melts at a temperature of 594°, but a lead tube filled with water, hot or cold, will not melt, though exposed to a red heat (1077°) temperature. To calculate, therefore, that because lead melts at 594°, and iron (cast) at 2786°, the last must necessarily last longer than the other as a boiler is erroneous. A lead pipe filled with water will last longer than an iron one. I have an instance of this in a boiler for brewing purposes with a copper bottom and lead at the sides. The copper and the lead have been in use for near half a century, but an iron one not so frequently used as the other was corroded through in half the time. It was, however, a wrought-iron boiler. Still, as lead is so peculiarly liable to melt and get out of shape, copper too dear, brass little less expensive, and wrought iron soon worn or corroded through, the preference must be given to cast iron. When of good quality, and pains are taken to secure a good cast, this iron is undoubtedly the best and cheapest material that can be employed for making horticultural boilers.

A cast-iron boiler properly cast is calculated to serve a young man his lifetime, providing he will give a good price for a good article. Cheapness is mostly obtained at the expense of quality, and boilers are no exception to the rule.

The 4th point may seem ungainly. Why have a boiler larger at the bottom than at the top? Because when a boiler is thus wider, a larger amount of surface is presented to the immediate action of the fire than there

would be providing the boiler was of an equal width throughout. For instance: a cylinder with a base of 3 superficial feet exposed to the direct action of the fire will not heat so soon as a conical boiler (supposing them both to hold the same quantity of water), with a base of 6 feet. Another reason why I would have the boilers wider at the bottom than at the top is this—When an upright passage is prepared for heat to pass through, it does so without parting with much of its temperature; whereas if the surface were exposed but inclined, the heat would run against it, as it were, in its never-failing passage upwards, and it would lose some of its temperature with ten times greater rapidity by contact than by radiation in a hurried passage. Everybody knows that an upright chimney is never so hot as a horizontal flue, the reason being heat ascends; in the chimney it is free, in the flue it is continually striving to ascend, and burrs, so to speak, against the flue top its entire length, consequently loses heat continually. In a boiler it is pretty nearly the same. A saddle boiler loses almost all the heat of the fire after its first contact with it, for when the flame goes along the side or over the boiler the top of the flue is heated more than the boiler. At the turns in the flue this is hotter, because the current of hot air is checked by an obstruction.

Another reason why I prefer a boiler wider at the bottom than at the top is, the circulation is more rapid. After water is heated the sooner it passes into the pipes the better, and the smaller the opening to admit the water from the boiler into the pipes the more quickly will it pass into them. By having the boiler top narrower than the bottom, the water is compressed similarly to a swollen river passing through a bridge, and everybody knows the current is stronger there than anywhere else. In a boiler, by heating a large body at the bottom of the boiler, and then causing it to pass through a narrow passage, we obtain double or treble the velocity. Let any one doubting this connect a piece of 1½-inch pipe to the boiler-nozzle instead of a four-inch, and he will find the hot water rush through it at six times the speed that it does through a four-inch pipe.

Water exposed to heat expands, becomes lighter, and ascends, and the quicker we get it out of the boiler after it is heated into the pipes the more heat we obtain. We do not want boiling water in the boiler and cold water in the pipes: therefore, the sooner hot water is replaced by cold water in the boiler the more economical is our heating apparatus. The water cannot come too freely into the boiler, it cannot go too soon out. I infer from this that the water should have double the space to come into the boiler as to get out.

The 5th point resolves itself into this: A boiler covered with soot and dust will not heat well. Upright flues are not so liable to hold soot as horizontal flues, and where the draught is quick the necessity to clean is not so great as when the draught is sluggish. Boilers, the parts of which are narrow and set horizontally, are very troublesome to keep clean, and when the flues have many bends more soot will lodge. Dirty flues reduce the heating power one-third, or, in other words, a clean flue will heat any surface one-third more quickly than a dirty flue with the same amount of fuel.

On the 6th point I may observe that many boilers are expensive because they cannot be repaired. A cast-iron boiler cast solid in one piece cannot well be repaired when it is worn through or burst, but a wrought-iron one can. Cast-iron boilers that cost £20 very often have defective places in them, and when these give way there is no remedy but a new one. This very often causes a serious loss to the owner and more mortification than enough, for it is not pleasant to see an expensive boiler worthless because it has a small worn place in it, or a crack that could, would the material allow it, be repaired for a twentieth part of the cost of a new boiler. It is quite possible to have a cast-iron bottom rivetted to a wrought-iron top.

The 7th point will be obvious to all. The sooner a boiler, or rather the water, becomes heated the better for meeting emergencies consequent on a fickle climate, for at times little heat may be required; but on the sudden, without previous warning, severe weather sets in and more heat is wanted. The structure to be heated has been kept as cool as circumstances will permit to save fuel and for the well-being of the subjects; but there is a minimum temperature

is injurious if not fatal: therefore the heating apparatus should be capable of attaining a certain temperature before the external temperature has reduced the internal temperature to a point when fire heat would be too late to secure the safety of the inmates of the structure, besides the anxiety of mind consequent on waiting whilst a boiler is heating, and the mortification attendant on observing the temperature lower after the fire is started instead of heating sharply. A slowly-heating boiler is more costly than a quickly-heating boiler, but, of course, much depends on the draught. A boiler heating slowly through a bad draught, and another heating quickly with a strong draught, will be about equal in cost. A boiler, therefore, ought to heat quickly without wasting any heat or burning more fuel than a slowly-heating boiler.

The 8th point conveys its own meaning. A boiler should be under control like a horse. It ought to keep the pipes either warm or hot, and consume only half the fuel for the former temperature than for the latter.

Point the 9th is perhaps the most important. A boiler that burns coke will be more costly than worthy where coke is 21s. per ton, and other fuel can be had for 5s. per ton and afford the same result.

Such a construction as a universal boiler never has been, and perhaps cannot be, manufactured. A boiler that will heat readily by wood would suit in some places, by coal at another, and by coke at a third; but a boiler that would heat with a combination of each is much wanted.

The 10th and 11th points are solely relating to economy.

Point 12th is well high impracticable. Neither is it necessary to provide for the cleaning of a boiler from the inside, for there is no steam in a boiler, therefore no incrustation of the iron. No one ever, or very rarely, saw any incrustation on a boiler or pan without a lid; and in a boiler closed from the external air and full of water little or no incrustation takes place, providing the sediment resulting from corrosion is let out before the particles are united to the boiler. Boilers are more liable to become choked from corrosion and the lodgment of sediment in the lower parts and the return-pipes than to become blocked-up by incrustation. In fact, any boiler (I am not writing about steam boilers) will be corroded through sooner than choked by the incrustation resulting from the use of the hardest water. Providing there is a hole drilled in a boiler at its lowest point with a pipe protruding from the brick-work and a tap, that is all that is required to clean a boiler. —G. A.

(To be continued.)

JOTTINGS FROM PARIS, 1863.

EVER since my return there has been one incessant round of flower shows, and to chronicle these I have been compelled to put on one side the few stray notes that I had made on some of the notabilia in the gardening way which struck me this year; and as I have ever found that any information to be obtained on the subject of ROSES could be had from either the Verdiers or M. Margottin, I managed to make a little trip to Bourg-la-Reine, and have a couple of hours' chat with as genuine a rosarian and as honest a man as there is on either side of the channel. Unfortunately I was nearly three weeks too soon to see anything in flower, and was somewhat disappointed; but I then learned what perhaps I ought to have known before—that it is not in the early spring that they are so much before us, but as the month of May advances; and it brought to my mind what struck me at the time as curious—that a gentleman who kept a regular thermometric account of the temperature at different places, once told me that it was astonishing how little difference there was between Paris, Lisbon, and his own place up to the end of April, but that after that it became very perceptible. Knowing that we have ROSES in bloom in June I expected to find some at least in flower, and was surprised to find that the buds were no farther advanced than some in my own garden when I left home. I was content then to have a view of one of the most beautifully even lot of ROSES (as standards) that I ever saw, and to have a good chat with my old friend and his amiable son.

We were tolerably well agreed as to the merits and demerits of the various Roses which the previous year had produced, the unquestionable excellence of a large number of them having been recognised in France as well as here, there being, however, the predilection for dark Roses such as *Vulcain*—a taste we cannot as yet arrive at on our side of the water. He had already bloomed our fine English Rose *John Hopper*, and expressed himself greatly pleased with it. *Madame Clemence Joigneux* is said to be something like it; but I have not seen that variety, and so am unable to say whether it be so or not. *M. Margottin* spoke in high terms of *François Lacharme*, which we have all learned on this side of the water to esteem highly. By-the-by, I should be glad if your rosarian subscribers would test this as to its perfume: a bloom that I cut the other day had the most peculiar fragrance I ever recollect to have met with in a Rose, it having a most distinct flavour of lemon, almost like the Sweet-scented *Verbena*, so called, combined with attar of Roses. It may have been owing to some peculiarity of soil, but it certainly was the most deliciously scented Rose I ever smelt. *Charles Lefebvre*, *Madame Boutin*, and other flowers which have established themselves in our good graces were also highly spoken of.

We had a long talk on the subject of seedling Roses, and his treatment amply explains the fact that so few indifferent Roses have been let out by him; in fact, if ever he does let out a Rose of second-rate merit, I believe it to arise from the capriciousness which attends the growth of this lovely flower in all seasons and places. A great deal has been said, for example, against *Boule d'Or*. Well, it is in some seasons difficult to open; but I have cut this summer from a standard on the *Briar*, as fine and highly coloured flowers as I ever saw at *Bourg-la-Reine*; making one exclaim, If only one had such blooms every three years it would be like running the blockade, one hit would amply repay two losses.

The plan which *M. Margottin* adopts with regard to seedlings is, when he sees one of promise to bud it on two or three stocks for the first year. If it succeeds well on these, he next year increases the number, so as to have about twenty on trial. If it does not answer his expectations he throws them away, keeping only one or two; but if it maintains its character it is still further increased, so that four seasons elapse before it is let out; and it sometimes happens that even then it belies its promise, and he is obliged to throw it away. We saw one variety which he had grown for nine years, and which he intended to have discarded; but last season it gave some beautiful blooms, and so he has tried it another season. Another, with very beautiful blooms, had wood of so "villain" a character, so like the wild *Briar*, that he could not grow it, for the point at which he aims is robust habit combined with excellence of bloom. He considers that no beauty will warrant his sending out a sort deficient in constitution. We know that *Jules Margottin*, *Louise Odier*, *Louise Margottin*, &c. are excellent in this respect; and I have no doubt we shall find the same character pervading his new ones. What use is there in growing, for instance, such a sort as *Madame Furtado*? You may obtain an excellent flower, and it is a beauty when caught well; but then nine out of ten of the plants are yellow and weakly, and disfigure the bed in which they are growing.

M. Margottin had heard nothing of the new Roses of other growers, but he has three of his own which he believed would be found to be acquisitions. Two of these he has since forwarded blooms of to me, and one of them will be figured in the September No. of the "*Floral Magazine*." It is quite a novelty among *Bourbons*; a seedling of *Louise Odier* crossed with some dark Hybrid *Perpetual*, retaining the shape of its parent, of a dark crimson colour, and having what is very rare in this class—a most delicious fragrance. This he has named after myself, and will be let out this autumn. Another was a large crimson-flowered Hybrid *Perpetual*, a seedling from *Souvenir de l'Exposition*, and, like the preceding one, is of very vigorous habit, and I believe will be found an acquisition.

M. Margottin's garden is returning to its former well-stocked state, having recovered from the severe winter of 1901 which killed so many of his seedling plants. I never saw a finer lot of plants than those which he has now in it,

and I deeply regretted I had not been there three weeks later to see them in bloom.

I also paid a visit to *M. Charles Verdier*, and from him learned that it is his intention, if possible, to send over a collection of *Gladioli* somewhere towards the end of this month; but I fear there will not be any shows at which he can exhibit them. He has gone largely into their growth, as may be gathered from one fact—that he will have nearly a thousand bulbs of *Reine Victoria* (the finest white grown) for sale this autumn, and that he will be able to reduce the price to about three francs a-bulb; and as he is most careful in all connected with his business, *Gladioli*-growers would do well to bear his name in mind. His address is *Rue Marché aux Chevaux, Paris*. I could glean nothing about new Roses from him. The pleasant task of reporting on them I must leave to some other more fortunate traveller than myself, and conclude with again acknowledging the great kindness and attention I received from all with whom I came in contact in the horticultural world.—D., Deal.

KNOWLEDGE DESIRABLE FOR GARDENERS.

"I am a young gardener, and would like by-and-by to obtain a good situation. Meantime I should like so to improve my time as to fit me for such a situation, if I should happen to procure it. I want to know, therefore, what are the things that are most requisite for a gardener to acquaint himself with. Botany, I know, is necessary; but I think there are other things to be studied even before botany. I do not think it would benefit a gardener if he were to study ever so long at botany if he could only read and write.

"I know that gardeners, as well as other tradesmen, are nothing the worse of knowing a little of everything; but still there are some things that they should know most about, and these things are those on which I am particularly desirous of information.

"I learnt a little of Latin at school, so that I can understand many of our botanical names better than a good number of gardeners. I have heard even head gardeners giving such absurd names to plants, that I often would have liked to have corrected them only for fear of giving offence.

"If you do not think my letter very foolish, perhaps you would be kind enough to reply to it in your answers to correspondents, and tell me what I had best study in the meantime. If you do think my letter too foolish you might tell me so, and that itself will be a lesson to me.—D. B."

THE having replied in a short note as to the purport of your letter when we received it must, with having little time on our hands lately, plead our apology for not sooner entering upon the subject more in detail. We by no means imagine that the matter of inquiry is at all foolish, but consider, on the other hand, that scarcely anything could be more sensible. The difficulty in replying as to the branches of knowledge most important for a gardener to study, arises from the great difference in taste and mental constitution, in unison with the well-known fact that we will naturally excel in those departments that are the most pleasing and interesting to us.

You are quite right in coming to the conclusion that the more a young man knows the more likely will he be to succeed as a gardener; but then it should never be forgotten, that the success will be even less owing to the possession of knowledge, than to the power and generalising tendency of bringing that knowledge to bear upon and regulate the operations of our everyday life. Many a man possesses wondrous stores of knowledge, but for want of this simple adaptation quality they are of little more use to himself or others than the hoarded riches of the miser. The farmer dearly values his huge piled-up heap of manure in the farmyard, not for the good it will do there, but for the effects it will accomplish when incorporated with the soil of his fields. We must try with all our gettings to avoid being a mere piled-up heap of good manure. "I know it is in him! I know it is in him!" used to be the ejaculation of a loving father as to the abilities of an only son, that others of our village community looked upon as anything but particularly bright. "But what if it never comes out, Tom?" was the reply of a messmate. Ah! the coming-out was the grand proof, and the proof never came. Hence men of but

limited acquirements, but possessed of this coming-out—this adaptation-to-circumstances principle—have been more valued for their services, and done more good in their day and generation, than some great philosophers and encyclopædists of knowledge, whose minds seemed such a vast storehouse of information that the bringing-out of that information upon any one object of utility seemed to be unworthy of or beneath their serious consideration.

Again: We should never forget—(though the possession of great stores of knowledge is ever compatible with that knowledge being rendered subservient to the common operations of everyday life, and the understanding of the principles on which such operations are based will not only enable us to perform our work better, but give to work and toil an elevated pleasure)—that still an intimate and thorough acquaintance with a few branches of knowledge will be more useful and satisfactory than a mere general passing acquaintance with many departments of science; and therefore, whilst despising no field of investigation, the young gardener will act wisely who devotes his attention chiefly to those pursuits for which he feels he has peculiar aptitude and taste, and which will be most useful to him in elucidating and explaining the operations of his everyday life.

Before alluding to some of these we would clear away one or two misconceptions. The first is, that a gardener cannot be a good scientific botanist without a good knowledge of Latin and Greek. No doubt such knowledge would be desirable, but not at all likely to be general until employers show their appreciation of such acquirements by a suitable remuneration. It is sufficient to disprove this misconception to state, that many good practical botanists never had the privilege of acquiring even the rudiments of a classical education. The second misconception is, that the knowledge of these classic languages is necessary to the right pronunciation of the botanical names of plants. The man who pronounces these according to the rules given by Loudon and others, will often do so more correctly than the mere classical scholar, but unacquainted with botanical nomenclature. It is not such an easy matter to decide upon the true pronunciation; as in our young days, at least, the sound emitted of the same word was often very different in Edinburgh from what it was in London, and in such cases it is generally best not to run counter to the stream, but to get into the habit of using the pronunciation that is most popular in your neighbourhood. In matters of no moment there is no advantage in mere singularity, though, no doubt, the advocates of the different systems could argue lustily and learnedly on the matter. And, lastly, though we trust the oldest gardeners that know themselves will ever be humble enough to learn, still it is the natural position of the youth under such circumstances to receive rather than to impart instruction; and when young people venture on the delicate ground alluded to by our correspondent, it should ever be done, even as to the pronouncing of a name, with the humility and kindness of a disciple, and not with the assumed pedantry of the pedagogue. In the one case the young man will rarely fail to secure the warm respect of one who may have much in his power to advance his interests; in the other case he is too apt to arouse a feeling which thus finds muttered utterance, "He is far too knowing to learn from me. Let him alone—why should I bother?"

Some latitude, therefore, should be given as to the mere pronouncing of botanical names of plants, though the young gardener should ever aim, not only at pronouncing them, but writing them correctly; and though we should ever look on a knowledge of botany as a great advantage, and still more a great source of elevated pleasure, still we do not consider such knowledge as the first essential necessary, because we well know that among the employers of gardeners there are very many who will excuse a comparative ignorance of botany, who will not even find their ears tingle at the most uncouth pronouncing of the name of a plant, who will be slow to find any excuses for rickety plants, half-ud flower-beds, a want of crisp vegetables, and a deficiency of ripened, perfect, well-flavoured fruit.

Though well aware of our inability to mark out a course of study that would be generally applicable as the best for all learners, we have no hesitation in propounding in the first place to the young gardener the importance of being a

thorough comprehending of all the details of these operations, not deeming even the simplest and the minutest of these beneath his careful attention. These matters were more attended to when the gardener had to go through his regular course in different departments. The division-of-labour principle has so far interfered with it, that you will now more frequently meet with a first-rate budder, propagator, plant-grower, &c., than with a man who is generally conversant with all gardening operations. This all answers well enough in commercial establishments; in fact, they could scarcely be conducted without it; but it will not answer in a gentleman's garden, where one man must superintend and take an active part in all operations.

It is no uncommon thing to meet with intelligent youths that have lived in large gardens, that would cut a sorry figure with spade, hoe, scythe, knife, hammer, or mowing machine, when placed in juxtaposition with a common labourer. Now the young gardener ought not to be satisfied until he equals, nay, excels, the labourer in the quantity and the quality of his workmanship. It must be a galling thing for a man looking out for a master's place to see a labourer sent to finish the work which he left in a muddled unsatisfactory state. We knew an otherwise bright young fellow to whom the sight of a spade was like a nauseous dose of medicine in prospect. For the life of him he could not turn over a five-foot flower-bed without leaving one side some 6 or 8 inches higher than the other—aye, and he would plant it too in that condition. He had passed his apprenticeship and journeymanhood in stokeholes, potting-sheds, and greenhouses, and knew as little about a scythe as the man who never saw one. Now, much of the neatness and the comfort of a gentleman's garden depends on the superintendant being practically conversant with the best mode of doing everything, and the quality and the quantity of work that ought to be done in certain circumstances. I once heard a pretty quarrel between a mistress and her maid-servant; and the latter, stung into casting what she supposed withering reproaches, declared, "I took you for a lady. If I had known that you had previously been a servant I would never have served you, that I wouldn't." Probably the mistress knew too much, and possibly expected too much. The gardener in a gentleman's place is merely a servant with helpers under him, and he will best discharge his duty to both by possessing, not merely a theoretical, but practical acquaintance with all gardening operations. Aim, therefore, at being an expert and a ready workman, and you will never stand still for a tool. Do not be content whilst a labourer can do work better than you can.

In connection with the use of tools, we would advise obtaining as soon as possible as much knowledge of mechanics as will enable you to do work well at the least wear and tear of bodily energy. Two men will each dig a piece of ground equally well; but the one will not be tired, and the other greatly distressed, because in the mode of inserting the spade there was more resistance to be overcome, and less leverage power to overcome it, and so with many other operations. A slight alteration will often cause a barrow to wheel lightly instead of heavily. One man will so set a scythe and regulate the handles that he will mow with his body merely slightly bent, another will not work unless his body is bent over the scythe as if he meant his nose to kiss the ground. The very posture, independently of the workings, is fatiguing, and could scarcely be endured but that people get used to anything. And so with many other tools. If work is done equally well, the greater ease with which it is done ought ever to be a recommendation.

Again: As a security against neglecting simple details, we would urge the importance of keeping a memorandum or diary of all operations, especially of sowing, planting, gathering, changes of temperature produced either naturally or artificially, &c. These will be of great future advantage, and will tend, from showing what is required in an establishment, to dispel the illusion that some young men seem to entertain—that the growing a few plants and flowers is all that is required in gardening. The man who thoroughly masters these little matters may be a most successful gardener though a stranger to all the "ologies;" whilst the man who neglects them, or considers them unworthy his notice, may be a very poor gardener, though a Latin and a Greek scholar, and a learned philosopher besides.

Then, again, we would advise our young friends, in their working hours and in their studying hours, to aim at being methodical. The man who has no method in his work will in general have no method in study, and will, most likely, not do great things in either. We fear there is a growing tendency to want of method. Our boasted improvements have lessened the necessity for close uninterrupted attention, and hence there is frequently doing and undoing, undoing and doing, and never finished. The motto might well be inscribed on every garden tool-house—"In doing work, avoid making work." One man will go and do a job, and you will never see where he has been. Another will make such a mess that the first job was nothing to the jobs which he made. You will never lose sight of his track from the rubbish and the messes he leaves behind him. The thus making work is ever apt to keep people in a muddle. In most gardens there is quite enough of work for even method to reach. There is a man you tell to go and do what is necessary to a series of flower-beds that he knows all about as well as you do. He thinks a moment, for he is a man of method; and away he goes, taking hoe, rake, tyes, stakes, broom, and basket or barrow with him. You tell another man to do a similar job, and off he starts with his hoe. He has been chaffed for thoughtlessness, and, ere long, he sneaks to the tool-house for a rake chiefly for the edges of the beds. By-and-by the journey is repeated for tyes and little sticks, and ultimately there is a double journey for a broom and a barrow, to the no small wearing of shoe leather. Suppose that these men continue in these marked habits, would we not expect to witness a very different result, when each had a separate charge with a similar amount of labour power under him? The want of method, more than the want of knowledge, is often the cause of want of success.

And the same rule will hold true as to success in study. A dip at this, and an hour at that, will never enable a youth to master any one subject. Change is pleasant; but make it all change, and how is it possible to attain concentration of thought and of energy? Some have recommended devoting the hours of the evening, or at least the different evenings of the week, to different branches of study. We know very little, but judging from our own experience, we should imagine this plan to be all a mistake, so far as the common average of working men is considered. We would recommend, instead, to take only one chief subject of study in hand at one time, be it grammar, arithmetic, mathematics, systematic or phytological botany, geology, &c., or whatever it was, and stick tenaciously to it until it was so far mastered that we could count and report our progress; and in the meantime take up seriously with no other subject, except such as would give cheerful relaxation—as music, the newspaper, or even a little of light reading, as a good novel. The mind cannot always be at full stretch. It, as well as the body, demands change and relaxation. This relaxation will sooth and refresh, just as a stimulant acts on jaded physical energy. In both cases the stimulus must be under control, or it will become the master instead of the servant. Taken in moderation, it will relieve and brace the mind for further energy. Taken in excess, the mind becomes unfitted for sustained and concentrated thought. We have known young men allowing themselves half an hour of relaxation, and devoting each evening of the week to a different purpose; but by the time the regular night came round, they had pretty well forgotten what they had acquired, and on the whole made little progress in comparison with those who devoted a month or two at a time chiefly to one subject.

But for our correspondent being a Latin scholar, we should say that, next to a good methodical workman, the young gardener should be well up in reading, writing, and arithmetic. A good education is a great advantage. The want of it in these days need be no barrier to the youth of resolute determination. Some of our ablest, most intelligent gardeners can look back to the time, when, as they handled the fire-shovel, they could scarcely spell their way through a simple sentence. What they have done others may do. The educated youth will have the advantage if he do not think so much of his learning as to make him careless and inattentive. In a previous article we hinted that education, with a little capital or without it, might do

better than learning to be a gentleman's gardener; but the field offers something like a prize to the comparatively uneducated youth of humble means, who resolves to learn and triumph over all difficulties. With the ability to read, write, and keep accounts, he possesses the keys to unlock every avenue of knowledge. As to reading, it is next to impossible to speak well, or with clearness and elegance, without being able to read well. Young men should, therefore, accustom themselves to read out with the voice, and not merely with the eye. This is apt to be forgotten in retired country places; but if it cannot be done in lodgings it ought to be done out of doors. There is great benefit every way in thus giving free utterance to the voice. Just as in singing or reciting soul-stirring poetry, not only the matter but the manner and the idiom of the author whose sentences we read out become more impressed on the memory; and thus reading well is not only a chief means for enabling us to speak well, but the best preparatory study for enabling us to write correctly.

Reading must ever be the chief means of increased information to the young gardener. Writing down what he knows is one of the best agents by which he can plumb the depths or the shallowness of his information, and is often the only agent he can use for making his knowledge influential upon others. That writing is the best that can be read as easily as print. All fine flourishes of penmanship should, therefore, be generally avoided, unless for some particular word of importance. No capital letters should be used, except for the word beginning the sentence. The shorter the sentences are, the more pleasant and perspicuous the reading. All contractions should be avoided, as "I've" for "I have," "sd" for "should," &c. Old friends may do such things with each other; young gardeners should aim at fullness, plainness, and distinctness. Be anxious to state clearly what you have to say, and finish when you have done. I need not speak of the importance of spelling correctly; the best aid to this will be reading good authors slowly, with an occasional turn-up of the dictionary. A pithy, well-written letter is a great recommendation where a servant has to correspond frequently with an employer. If he aims at elegance and correctness, and is at all young, he should study the grammars with their respective keys, of either Lenney, or Cobbett, and Lindley Murray, and then he can scarcely fall into the common errors of joining plural substantives with singular verbs, &c. We know men that write very elegantly, that never got a lesson in grammar except what they gave themselves, and now they can smile at the crudeness of the composition of even a Queen's speech to her parliament. No man will write easily, however, who is ever thinking on grammatical points. We are told that other men write very correctly who never learned a bit of grammar in their lives. They read the best authors carefully, and learned to write with equal clearness and perspicuity, their chief guides being clear expression of ideas, natural sequence of these ideas, and a pleasing impression and clear comprehension by the ear when the matter was read aloud. A writer who cannot make his subject clear to himself must appear in cloudland to every body else. With nothing but the ear and common sense to guide him, along with the helps above alluded to, an intelligent man will make few errors in composition, though he knows little or nothing of the rules of grammar. A careful study of the best authors will after all be the best teacher in this respect.

In speaking of the best authors, I would not include some of the most popular authors of the day, who, by high-sounding rodomontade and abundance of low slang, have done so much to injure the fine terse old Saxon English, and led young people to believe that the uncouth, the high-sounding, the long words of many syllables borrowed from foreign languages, and sentences ever so involved and long, are some of the essentials of elegance. It would be well to recollect that as "brevity is the soul of wit," so strength and elegance may ever be joined with the simplest words and the shortest sentences. Instead of going to such uncouth slang for models, it would be wiser to consult, in this respect as to style, the Book of Books, the pages of the "Spectator," the volumes of the "Gardener's Magazine," especially after the great London was united to Mrs. London, for seeing how massive strength and vigour may be

combined with the terse, simple, old Saxon, with its short words and short sentences. And once more on this subject, it is wise not to be too demonstrative, not to be always imitating the draper who hangs all his most valued goods in the windows. The humble student is not likely to do this. The educated scholar has a considerable temptation to transgress, and therefore, when writing homely English, he will let us know his superiority by introducing Latin here, Greek there, and French and even German ever and anon. Can anything be more stilted, unmannerly, ungentelemanly? We may feel our ignorance and our inferiority enough, but we may not choose to have them thus unceremoniously thrust upon us. If a writer feels he cannot express his meaning except in Latin or French, let him write for those who understand such languages. If he condescends to write in homely English and for English readers, let him keep to the English tongue. We consider it sufficiently copious to express every idea that is worth expressing. Such interlarding of other languages is a great disappointment to the humble English scholar. Intelligent people pass it by with the remark—"Ah, poor fellow! he must ring a bell to tell people how clever he is." He is only looked up to as something marvellous by that small and decreasing portion of our population who resemble the old woman, who valued the abilities and the learning of a clergyman in proportion as she thoroughly failed to understand him.—E. FISH.

(To be continued.)

STRAWBERRY-GROWING.

I HAVE been much interested by the article of your correspondent "H. C. K.," and I remember having seen his plan some years ago and then intended to try it, but owing to a change of residence and other circumstances it escaped my recollection. I am, however, somewhat at a loss to know whether I am to take his instructions literally or not. He says, "Place round each plant a heap of half-rotted stable-manure, so as to stand 8 or 9 inches high after being firmly pressed down with the hands; and the ring thus pressed down should extend about 10 inches all round—plants 20 inches at least apart."

It occurs to me that the quantity of manure is excessive, and that the result would be that the plants would be at the bottom of a hole 9 inches deep, and excluded from sun and air except from the top of the hole. If the plants are placed 20 inches apart every way, it follows that the entire plot will be covered with manure.

Your correspondent does not say whether he finds it needful to renew the mulching every year or not. I shall be obliged by his reply.

I yesterday assisted in gathering some of the fruit from three rows of Crimson Queen Strawberry grown about half a mile from Darlington by an amateur gardener, and it may interest you to hear fourteen of them weighed 1 lb. (avoir-dupois weight) exactly. It is a magnificent fruit in size, colour, and flavour.—A. ATKINSON.

OPEN-AIR FORCING OF EARLY CELERY.

THE following method has been successfully carried out by me when early Celery was required. I may add that I have had good blanched Celery fit for any table by the middle of June. I put fresh manure in the bottom of the trench, and made it pretty firm to the thickness of 10 inches, adding 4 inches more of good rotten manure on the top. I then left it until the next morning, when I gave the manure a good soaking of urine saved for the purpose. I left it for two more days; and, it being warm weather, it fermented as I calculated it would, and produced a very genial heat. I then covered it over with about 4 inches of soil made quite fine, and left it until the next morning, when I gave it a thorough soaking of liquid made from rotten dung and urine, and left it all night. In the morning it was of a temperature suitable for giving anything a start, and kept on for about ten days, which was quite sufficient for my purpose. I put in the plants the same night, and just sprinkled them overhead with water. The next morning I

them a foot apart every way, kept within 3 inches of the bed all round, so that it held three-score plants. I did not use a dibber, but made a hole with one hand, and was careful to spread the roots well. I may say the plants did not droop in the least, but started into growth at once at a most surprising speed. My worthy employer seeing the effect gave me great credit, for Celery had never succeeded in the garden before. I kept the plants in most vigorous growth for about five weeks before commencing to blanch.

I have omitted to state that after planting I covered all the bed amongst the plants with fresh horse-droppings from the stable, which assisted in keeping the bed warm and the dry air from the roots, and it acted as a stimulant when watering upon it. I kept a tub near to the bed filled with a mixture of fresh horse-droppings and a fair proportion of urine, and applied this every other evening not sparingly, but always watering overhead with clear tepid water, occasionally putting a little soda in the water, and having the water-tub fully exposed to the sun. I only blanch with 6 inches of soil, which I add to the plants at twice, finished-off with brown paper and other material; frequently watering and keeping it moist about them. Chickweed or any vegetable rubbish of that substance does well to finish-off blanching.

I should like it to be understood that the above practice is only applicable for procuring early Celery.—WM. LEDGER, Gardener.

P.S.—The Celery I am now writing about measured in height 3 feet 6 inches, and appeared to be the thickness of a man's leg. When prepared for the table each head weighed 2 lbs.

THE ALEXANDRA PARK FLOWER AND FRUIT SHOW.

It says something for the taste of us good English folk, that we do not consider a grand ceremonial complete unless a flower show be either a portion of it or looms at no great distance off. What would an Oxford Commemoration or a Cambridge commencement be without the flower show, where fair flowers and fairer maidens enchant the eyes of soft undergraduates and old time-honoured dons? what the Crystal Palace but for those wonderful gatherings of floricultural skill, to be present at which so many procure their season tickets? Would the Royal Horticultural Society stand six months, with all its royal patronage, but for its flower shows? And so, wisely did the projectors of this new people's park determine to inaugurate the opening of it with a grand flower and fruit show.

The park itself is another proof of the taste for the beautiful in nature which exists amongst us. Situated at so short a distance from London, it would hardly be believed by strangers to it what rare sylvan beauty, and exquisite undulating ground and extensive prospects it affords.

The art of the landscape-gardener will have little need to be called into requisition, as the ground is so beautifully laid out; and when the buildings shall have been erected, it will be to the inhabitants of the north side of London what the Crystal Palace is to those on the south. Nor do I think that it will interfere with the success of the older establishment. Tastes like these increase by being ministered to, and, like a new line of railway, open out fresh resources, while they increase the facilities of spending a pleasurable day in lieu of the stifling atmosphere of a public-house, or the questionable enjoyments of other places of resort. I believe, too, that many things manifest a desire to carry out this institution effectively. If I am rightly informed, no attempt will be made to open it on the Lord's day; the whole management of the police arrangements will be entrusted to that well-tried body the corps of commissioners; and amusements of a low character will not be admitted. The superintendence of the garden has been placed under the able management of Mr. Mackenzie, lately of Brighton; and as it is the intention of the Company to erect a portion of the International building in the grounds, some reminiscence of that famous place of resort will be perpetuated: and as the palace of Sydenham sprang like a phoenix from the ruins of the building of 1851, the Alexandra Park will owe its origin in a good measure to that of 1862.

Thus the ironwork and glass will be utilised for a new

Crystal Palace to be erected on the highest portion of the grounds, from whence a view rivalling in extent and beauty that from Sydenham is obtained—a view extending over the counties of Hertford and Essex, down the valley of the Thames, to Erith, &c., and away into Kent, while London is hid from view by the hills of Highgate and Hampstead. The richly wooded and park-like character of the foreground reminds one very much of that around Beckenham and Penge. Of the estate itself, which contains 480 acres, at least 250 will be retained for the purposes of the Company, and the remainder will be let off for villa residences. A large portion of it will be left in its present condition, as it is Mr. Mackenzie's opinion that landscape-gardening can add but little to the beauty of its sylvan glades, which will afford a fine scope for picnic parties to roam about at leisure as well as if they were a hundred miles from London. The trees around the Grove House are very beautiful; one walk, called Dr. Johnson's Walk, formed of large and wide-spreading Oaks, will, we venture to predict, be a favourite stroll, where

"Lovers' vows seem soft in every whispered word."

There are also a magnificent Chestnut tree, a fine Copper Beech, and other trees equally beautiful. I hope sincerely that the ruthless hand of the improver will leave these untouched. As I looked round on the capabilities of the place the thought came across me, To whom is Mr. Mackenzie likely to look for counsel in this matter? and I could not but wish that Mr. Marnock had a voice in the matter. He made so much of the capabilities of the Botanic Gardens in the Park, and many of his other efforts at landscape-gardening in the more natural style have been so successful, that he would be quite at home here. Water is not wanting; and although there is but a small portion of it at present, I do not doubt that it will be greatly enlarged and made as attractive as possible.

The Company, who only completed the purchase of the ground on the 24th of last month, determined to open it with all the *décor* possible, and so arranged to have, if possible, a grand flower show and an archery fête. It was a bold venture, for all depended on the state of the weather. Had the wretchedness of Tuesday and Wednesday continued, the whole affair would, both literally and metaphorically, have had a damper put upon it. As it was, with brilliant sunshine and fanned by a genial westerly breeze, it was a most decided success; and when to this is added that the flower show was one of the best—some placed it as the best—that have been held this season, that most of our great exhibitors were there, that a most liberal schedule induced competition which made it difficult to determine often which were the best, and that not one bad collection of any kind was staged, your readers may form some notion of the treat that it was to those who visited the grounds.

The amount of produce sent completely took Mr. Mackenzie by surprise, so that tent after tent had to be put up until four were more than filled. The large one contained as magnificent a collection of stove and greenhouse plants as have ever been massed together in July. The second contained a fine collection of fruit, the cut flowers, and table decorations. The third was filled with Roses and Fuchsias, and the fourth with fruit trees in pots; and in most of the classes it has rarely been my lot to record such splendid collections. The Roses exhibited by Mr. Keynes have never been equalled, as far as my knowledge goes, his collection of 100 blooms being a most marvellous lot. It is something even in a box of 48's to say that there is not a bad bloom in it; but when in a box of 100 one could not positively fix on an indifferent bloom, it may be well conceived what a rich collection it was. His box of 48's was hardly inferior to this; while the Messrs. Paul exhibited some very fine collections. Mr. Fraser's was also good. Amongst amateurs the contention was not sharp, there being but three exhibitors.

Mr. Turner exhibited some extraordinary blooms of Carnations and Picotees, as fine as I ever recollect to have seen them; but, as it would be impossible for me at this late period of the week to do justice to the florists' flowers, I must reserve my fuller notes of them for next week. I cannot, however, omit noticing the beautiful dinner-table decorations exhibited by Mr. James Cutbush, of Highgate, in which evidently a lady's exquisite taste had been called

into request—no little birds, bits of coral, shells, or fish disfigured the exquisite refinement of the arrangement of fruits and flowers. Some beautiful hanging-baskets were also contributed, and imparted great beauty and variety to the Exhibition.—D., Deal.

STOVE AND GREENHOUSE PLANTS.—The total amount offered for these was large—no less than £148, and the display made was proportionably good; the principal contributors being Mr. Williams, of Holloway, Messrs. A. Henderson & Co., Fraser, and Lee.

In the different collections were several excellent examples of *Allamanda Schottii* and *grandiflora*, two beautiful *Dipladenias crassinoda* and *splendens*, *Stephanotis floribunda*, *Rondeletia speciosa*, *Erica Parmentieri rosea*, in fine bloom; the lovely *Pleroma elegans*, *Vincas*, *Ixoras*, *Kalosanths*, and other plants usually exhibited, with the addition in the mixed collections of numerous handsome specimens of fine-foliaged plants.

In collections of twelve, the first prize was taken by Mr. Gilbert, gardener to E. McMurdo, Esq., Hastings; the second by Mr. Wheeler, gardener to A. Philpott, Esq., Stamford Hill.

In the Nurserymen's Class for eight, Messrs. J. & J. Fraser had first prize for a collection, in which were *Ixora javanica* and its variety *floribunda* in fine condition; a splendid *Kalosanthe* called *Phoenix*, and *Vinca ocellata*. Mr. Rhodes was second.

For mixed collections of flowering and ornamental-foliaged plants, the highest prizes were awarded to Messrs. A. Henderson & Co. and Mr. Williams, both of whom contributed extensive collections. In that of Messrs. Henderson were *Ixoras*, *Allamandas*, *Vincas*, *Clerodendron fallax*, and *Gnaphalium eximium*, a showy *Everlasting* with orange flowers when fully expanded; and for foliage several fine *Caladiums*, *Alocasia macrorrhiza variegata*, *Jacaranda filicifolia*, *Alocasia Lowii*, *Maranta fasciata* and *zebrina*, and *Cissus porphyrophyllus*, but not looking so handsome in its old as in a younger state. Mr. Williams had *Dendrobium formosum giganteum*, *Miltonia spectabilis*, *Cattleya crispa*, *Kalosanthes coccinea*, a very large *Latania borbonica*, and *Gleichenia spelunca* and *heciostophylla*, both very fine. Messrs. Lee had a handsome *Alocasia metallica*, *Cordyline indivisa*, *Dracena ferrea*, *Cissus discolor*, *Ixora coccinea*, several small *Heaths*, and some other plants.

HEATHS.—The show of these was good, though many of the specimens were not equal in size to those seen at previous exhibitions. Among the most effective were *Parmentieri rosea*, *ampullacea major*, *ventricosa Bothwelliana*, *vestita coccinea*, *Aitoniana Turnbulli*, *metuliflora bicolor*, and *tricolor Wilsoni*. Messrs. Jackson & Son and Mr. Rhodes, of Sydenham, were respectively first and second in the Nurserymen's Class, and Messrs. Fraser third. Mr. Gilbert had first and Mr. Wheeler second prizes in the Amateurs' Class of eight; and in the Open Class for six kinds Messrs. Lee were first with a collection in which was a splendid plant of the showy scarlet *vestita coccinea*, *ampullacea scotica*, and *Aitoniana Turnbulli*. Mr. Rhodes was second; Mr. Smith, of Norwood Grove, third.

ORCHIDS were not numerous. The best in the Amateurs' Class for fifteen came from Mr. Young, gardener to W. Stone, Esq., Leigh Park, Havant, who had some excellent *Cattleyas* and *Oncidiums*, *Phalenopsis grandiflora*, and several *Ærides* and *Saccolabiums*. By far the best collection, however, was that shown in the Nurserymen's Class by Mr. Williams, of Holloway, who had *Cattleya crispa* and *Leopoldi*, several fine *Oncidiums*, including *Lanceanum*; *Stanhopea maculata*, *Trichopilia tortilis*, *Saccolabium Blumei major*, and several fine *Ærides*. Messrs. Jackson & Son had *Stanhopea oculata*, *Oncidium Lanceanum*, and some good *Cattleyas*.

FERNS AND FINE-FOLIAGED PLANTS.—The latter, besides being shown in the mixed collections, had also classes in which they could be exhibited by themselves. They consisted of the kinds usually seen, many of the specimens, however, being very handsome. We particularly noticed *Alocasia metallica* with magnificent leaves, coming from Messrs. Lee and Mr. Williams, between whose plants it would have been difficult to have said which was the best. *Alocasia Lowii* was also sent by both these exhibitors. A fine specimen of *Cordyline*

indivisa came from Messrs. Lee, and a magnificent *Gleichenia heciatophylla* from Mr. Williams, who had also *Dion edule*, and *Latania borbonica*, both of which were large and handsome specimens. Messrs. Lee had first prize; Mr. Williams the second; and Messrs. A. Henderson, who had also an excellent collection, were third. In the Amateurs' Class for ten, Mr. Taylor, gardener to J. Yates, Esq., Highgate, had first prize for some large specimens, among which were good specimens of *Encephalartos latifrons*, *Dion edule*, *Theophrasta imperialis*, &c. Mr. Young, of Highgate, was second; and Mr. Donald, Leyton, third. The most remarkable Ferns were the tree Ferns from Mr. Williams, consisting of *Dicksonia antarctica*, *Cyathea serra*, *Smithii* and *exceles*, and *Alsophila australis*, all of which were of great size. For these Mr. Williams received a first prize, and he gained a similar award in the Class for twelve exotic species. His collection contained large specimens of *Cyathea Smithii*, *Cibotium Schiede*, and *Gleichenias dichotoma*, *semivestita*, *flabellata*, and *speluncæ*. Mr. Woolley, of Cheshunt, was second; Messrs. A. Henderson third. In the Amateurs' Class the best collection was that of Mr. Young, of Highgate.

MISCELLANEOUS.—Some good pans of Lycopods came from Mr. Young, of Highgate; *Lonicera aureo-reticulata* from Mr. Shenton, of Hendon; and from Mr. Williams an interesting collection of new and rare plants, most of which have been noticed at previous shows. Among them was the fine variety of *Disa grandiflora* called *superba*, *Dendrobium Parishii*, *Epidendrum prismatocarpum*, *Cupania pin-daiba*, *Alcacia Lowii*, *Pogonanthra reflexa*, *Cheilanthes Borsigiana*, &c.

FRUIT.

There was an excellent show of fruit, particularly of Grapes and Peaches, most of the exhibitions being very good.

In collections of eight dishes, Mr. Turner, of Slough, had the first prize for Black Hamburg Grapes, Queen Pine, Golden Perfection Melon, Moorpark Apricots, Royal George Peaches, Bigarreau Cherries, and Violette Hâtive Nectarines. Mr. A. Henderson, gardener to the Duke of Sutherland at Trentham, was second with West's St. Peter's, Frankenthal, and Black Hamburg Grapes, a Ripley Queen Pine, two Melons, Royal George Peaches, Elruge, and Violette Hâtive Nectarines, Moorpark Apricots, Brown Turkey Figs, Denyer's Victoria and Green Gage Plums, and Morello Cherries. A second prize was also awarded to Mr. Young, of Havant; and Mr. Carr, of Byfleet Lodge, Surrey, was third.

PINES were generally good. For four, two of a sort, second, and fourth prizes were awarded to Mr. Hannan, gardener to R. T. Crawshaw, Esq., for Queen and Ripley Queen; third to Mr. Henderson, of Trentham; and fourth to Mr. Penny, Regent's Park, for Moscow Queen. The most remarkable exhibition among Pines, however, was a Queen stated to be of the enormous weight of 7 lbs. 2 ozs., and which was also a handsome-shaped fruit. It came from Mr. Hall, gardener to the Earl of Scarborough, Sandback Park, and, of course, received the highest prize. Mr. Carr who was second, had also a finely-grown fruit of large size, its weight being 5 lbs. 13 ozs.; and a similar award was made to Mr. Kaile.

GRAPES.—The best of these came from Mr. Meredith, of Garston, who was first for three dishes, first for a single dish of Black Hamburgs, first for a single dish of Any other variety with splendid bunches of Trentham Black, also for a box of Black Hamburgs weighing 20½ lbs., the berries in every case being large and well-ripened, and the bunches of Hamburgs large and compact. The second prize for Black Hamburgs was taken by Mr. Wallis, gardener to J. Dixon, Esq., Astle Hall, Congleton, who had also similar awards for a good box of the same variety, and three bunches of Black Prince in the Any variety Class, one of them being fine, though far from equal to those exhibited by Mr. Hill at the Royal Botanic and Kensington Shows. Muscats as usual were generally unripe. The best came from Mr. Turner, of Slough, his bunches being far in advance of all the rest in point of ripeness, and the berries were of good size. Mr. Smith, of Norwood Grove was second, and Mr. Embery third.

PEACHES AND NECTARINES formed a good show. In two dishes of each Mr. Turner was first with Violette Hâtive and Elruge Nectarines, and Royal George under the name of *Mignonne* and Violette Hâtive Peaches. Mr. Monro,

of Rabley, Barnet, was second; Mr. Hill third. In two dishes of Peaches Mr. Beech, gardener to F. Alcock, Esq., Kingswood, was first with Grosse Mignonne; Mr. Dawson, gardener to Earl Cowper, Panahanger, second with Violette Hâtive and Early Grosse Mignonne. Mr. Turner had a most excellent dish of Royal George, also Violette Hâtive, receiving the third prize.

MISCELLANEOUS.—Moorpark Apricots from Mr. Kaile and Mr. Knight, Rowfant, had first and second prizes; Messrs. Lane & Son received a first prize for Rivers' Early Favourite Plum grown in pots; Mr. Turner and Messrs. Lane first and second prizes respectively for Bigarreau Cherries; and Mr. Turner first for some excellent Circassian Cherries. In Green-fleshed Melons the best was a white-fleshed Hybrid Cashmere from Mr. Rutland, gardener to Captain Peplow, Garnstone Castle, Hereford; the second best, Golden Perfection from Mr. Monk, Tottenham; and in the Scarlet-fleshed class Mr. Stanley was first with Scarlet Gem. Messrs. Lee had a first, and Messrs. Lane a second prize for Vines in pots.

THE PROPOSED GARDENERS' FRIENDLY SOCIETY.

I READ of your amazement at the apathy of gardeners to what concerns them so intimately, so vitally, with something like surprise, but also, I must confess it, with something of shame as to my share in that painful perplexity. I have been purposing writing to you ever since your very clever correspondent "G. A." propounded, and you so thoroughly perfected, the scheme; but I fear that my evil genius, Procrastination, has again stepped in and done me, and in a certain sense the whole profession, this injury. To those who could handle the subject perfectly and discuss it in all its bearings, throwing light on its most minute ramifications, there is a fruitful field open; and I long to hear Mr. Fish give his ideas upon it, knowing as I do that he will see in it, and through it, and all round it, and tell us what he sees with simple perspicuity.

I, for one, unhesitatingly give in my most cordial and thankful approval of the scheme. It is just the very thing that I have been wanting for some time, ever since I was married particularly. I should be delighted if it could be carried out. I had been debating with myself whether or not to enter the Gardeners' Benevolent Society, but the funds of that Society (albeit it is a most noble institution), are too precarious for my approval. I should be sorry to be left, or that my wife and children should be left, to the tender mercies of subscribers' votes. The machinery of canvassing is too cumbrous, too laborious, too expensive, too uncertain in its issues. You may spend a small fortune in canvassing subscribers' votes and then lose your election.—St. A., *Notts.*

I FULLY agree with "AN IRISH SUBSCRIBER," and Mr. F. Chitty, that gardeners are strangely backward in the efforts they make for the furtherance of their good as a class; and I deeply regret the but-too-palpable inertness to which they have seemingly given themselves up. I cannot find a justifiable excuse for this; nor can I even conscientiously endorse that put forth by Mr. Chitty—namely, a want of greater and more immediate communication between individual members of the class. I would not dispute the probability, that were it possible for them to come within more immediate communication the one with the other, that this and many other kindred subjects would be effectively ventilated, and the views of each at such gatherings would be the more readily communicated the one to the other; but every gardener, however isolated, can sift a subject, and settle what are its merits or demerits. To bring this into more immediate bearing upon the proposed Society, I ask what there really is therein to call for numerous minor discussions? Already we have in a plain readable form the preliminaries, the very rules of a society, placed before us. Our proved friends, the Conductors of this Journal, have offered these pages for a free discussion of the subject—a subject which, no one will dispute, is of deep and lasting interest to us as a body.

I have watched these pages weekly for either adherents or dissentients; yet have been much disappointed in my wishes as to either. It should be well understood that where a question is asked to be answered by the general gardening community, it is not for the staff-writers of this Journal to give a response at first. Either way may be of use; but I did expect (the least indeed that could have been expected), that very many strenuous advocates for so great a desideratum would have been found amongst those who do not as a rule resort to so rational an occupation as that of giving publicity to their opinions or practices generally.

This Society is a proposal which should bring the most prosperous of the class to its aid; for these are the individuals who should do all in their power to forward the advancement of our class and calling.

I would earnestly ask my fellow gardeners, if they are favourable to the establishment of such a Society, to act at once—not for each to wait with, it may be, the thought of seeing what others may do in the matter.

Let me also hope that the Editors have not come to the conclusion that there is no success; and also let me hope that a sufficient number will at once send in their adhesion to the rules generally, thereby justifying a commencement in so great a requirement. I am not only ready, but anxious, at the earliest moment to subscribe my mite towards the expenses ever attendant upon the preliminaries of such an undertaking.—W. EARLEY, *Digswell*.

THE FROST OF JULY 19TH.

[In addition to our notice of this frost, inserted at page 57, we have the following communication.]

WILL you oblige me by stating whether the frost of yesterday morning (19th) was general or only partial? as the tops of my Fluke Potatoes (at Waltham Cross) were all frosted, and are now thoroughly blackened. Also will you say if the Bougainvillea will do in a greenhouse, as I can do nothing with it in my stove-house; and what treatment do you recommend?—AN ORIGINAL SUBSCRIBER.

[We had a slight white frost on the morning of the 19th at Luton, but it left little or no traces behind it. The Bougainvillea will do best in a stove in summer with heat below the roots, abundance of water given to it, and the shoots kept near the glass. In autumn less water should be given to the roots, but heat kept on and a dry atmosphere. In winter keep drier still; and increase heat and moisture gradually in spring. We think a greenhouse will be too cold for it, but time will try. It requires heath soil and loam to grow in, and abundant drainage. We fear your plant must be sickly.—R. FISH.]

DEATH OF MR. FRASER.—It is with feelings of sincere regret that we announce the demise of Mr. Fraser, the celebrated landscape-gardener, which took place at his residence, 25, Westland Row, Dublin, on the night of the 12th inst., after but a few days' illness. Mr. Fraser has been amongst the most successful of Irish landscape-gardeners and land-improvers, and there are but few residences of our nobility and gentry in Ireland where traces of his sound judgment, eminent skill, and classic purity of taste may not be found; and his abilities were so greatly appreciated, that his practice had considerably extended through England and Scotland for several years past. The extensive improvements carried on at Curraghmore during the late Marquis of Waterford's lifetime; at Castle Martyr, the seat of the Earl of Shannon; at Adare, that of the Earl of Dunraven, and hundreds of other fine old seats; and the new creations of Gowran, Lord Clifden's; Castle Oliver, the Misses Gascoynes'; and Saunders Court, the Earl of Arran's, remain lasting monuments of his great abilities. His literary attainments were of a high order, and his handbook for Ireland and traveller's map, which have gone through several editions, are in the highest estimation with tourists, commercial men, and travellers of every grade, as the surest and best guide to all who wish to see Ireland thoroughly and profitably. As a personal friend many will mourn his loss.—(*Irish Farmers' Gazette*.)

ROYAL HORTICULTURAL SOCIETY.

JULY 21ST, 1868.

FLORAL COMMITTEE.—Mr. Salter, Hammersmith, exhibited two Pompon Dahlias, *Deutsche Bellis* and *Goutte d'Or*, their chief recommendation being a dwarf habit. These specimens were grown in pots, and it was decided that their merits would be better tested when grown in the open ground; also, *Pelargonium Aglae*, with pink flowers having a white centre, very similar to *Rose Queen*.

Mr. Bull, Chelsea, sent three *Caladiums*, *Pallidii*, *regalis*, and *Cannaertii*—the plants were very small, and it was requested they might be seen again; also, *Boussonetia papyrifera foliis variegatis*.

Mr. Watson, St. Albans, again sent *Calceolaria Bijou*, with chocolate crimson flowers. This plant received a second-class certificate at the second great Exhibition, June 17th; but from its improved character and promising usefulness as a bedding variety, it was on this occasion awarded a first-class certificate.

Mr. J. Holland, Spring Grove, exhibited two seedling *Petunias*, one semi-double named *Circle*, the other *Hollandii*, a small, striped, convolvulus-shaped flower.

Mr. Thompson, of Ipswich, exhibited *Helipterum Sandfordii*, an annual from Western Australia of the Everlasting section, with small bright yellow flowers in dense bunches. As a bedding plant it was considered desirable, and was awarded a first-class certificate. Seeds of this annual were sent to England ten years ago by Mr. Drummond, but till the present time the plant has been little known in our gardens.

Mr. John Boff, Balls Pond, sent *Verbena Firefly*, with variegated foliage—a coarse worthless variety; Mr. Wainwright, Kettering, a seedling *Pink*, *Prince of Wales*, of the *Anne Boleyn* class, but very thin and small; Mr. J. Perkins, Northampton, cut flowers of a seedling *Verbena*, *Charmers*, deep mulberry with a peculiarly marked centre.

Mr. Turner, Slough, had four seedling *Picotees*, all of them of excellent quality. They were *Lucy* (Taylor), a pure white ground; light rose-edged flower—first-class certificate; *Col. Clerk* (Norman), light purple-edged, good form; *Miss Sewell* (Kirtland), fine, light rose-edged flower; and *Miss Williams* (Norman), a light rose-edged flower.

Messrs. Downie, Laird, & Laing, sent a beautiful seedling *Hollyhock*, *Alexander Shearer*, of first-rate form, full and circular flower, dark crimson red, for which a first-class certificate was awarded; also a collection of twenty-four *Hollyhocks*, which for their excellent qualities received a special certificate. Among them we particularly noticed the following—In Memoriam, Mr. Chater, George Keith, Perfection, Illuminator, Miss Nightingale, Sambo, Empress Eugénie, Lady Dacres, Lord Loughborough, Primrose Gem, Excelsior, and Purple Prince.

Mr. Parsons sent six seedling *Achimenes*, of which one named *Moorii* was a pleasing variety, with soft rosy salmon flowers and a fringed or ciliated margin: it received a second-class certificate. The remainder were good varieties, but not distinct from others in cultivation.

Mr. William Paul exhibited cut specimens of a seedling *Hybrid Perpetual Rose* *Princess of Wales*, bright carmine rose, which was much admired, and when seen again under more favourable circumstances will doubtless receive a high award. After the Meeting a box was sent by Messrs. Barr and Sugden, containing cut specimens of an old and well-known plant—*Gloxinia tubiflora*, remarkable for its long white-tubed flowers. These specimens had been just received from Nice, and were damaged by their long journey.

FRUIT COMMITTEE.—Mr. Whiting in the chair. Prizes were offered at this meeting for the best dishes of Peaches and Nectarines respectively, and for the best collection of the newer varieties of Strawberries; but there were no exhibitions in these classes.

Mr. Whiting exhibited fruit of *Jefferson Plum* in competition for the best dish of Plums, and received the first prize. Mr. Terry, gardener to L. Ames, Esq., The Hyde, St. Alban's, received the first prize for the best collection of Currants. There were *Baby Castle*, *Red Dutch*, *Red Champagne*, *Old Black*, *Black Naples*, and *White Dutch*, all of which were very fine examples of the varieties.

Mr. Perkins, nurseryman, Northampton, sent a seedling Strawberry named Earl Spencer, which possesses great merit. It is of good size, conical shape, and regular form. The colour is pale scarlet, like British Queen; the flesh is solid, and has a fine pine flavour. The Committee recommended this variety as being of great excellence, and well worthy of cultivation. Messrs. Carstairs & Sons, of Edinburgh, also sent a seedling Strawberry; but it was not considered superior to Keens' Seedling, to which it bears a close resemblance. The dish of Keens' sent along with the Seedling was not, however, considered as very creditable to the cultivation of that variety in the neighbourhood of Edinburgh.

A fine collection of Currants was sent from the garden at Chiswick, and Mr. Terry exhibited a fine dish of Tomatoes.

ECHINOCACTUS RHODOPHTHALMUS (RED-EYED ECHINOCACTUS).

Nat. ord., Cactaceæ. Linn., Icosandria Monogynia.

A GREENHOUSE succulent plant of sub-columnar form, 6 inches or more high, longitudinally divided into eight or nine deep furrows, with obtuse ridges formed by transverse lines into lobes or tubercles, each tubercle bearing a cluster of about nine strong, straight, spreading spines, about an inch in length, the central one longest and standing forward. The flowers—from the top of the plant—are large, handsome, the petals linear-spatulate, rose-coloured, a dark red stain at the base forming a radiating circle around the staminal column. From Mexico: San Luis Potosi. Introduced about 1847, by F. Staines, Esq. Flowers in summer.



Mr. Smith, Curator of Kew Gardens, says that Cactææ are almost indifferent as to the kind of soil they are grown in, provided it is not retentive of moisture, and that the present very pretty species will thrive in a mixture of light oam and leaf mould, containing a small quantity of lime-ubbish nodules, the latter being for the purpose of keeping the mould from becoming close and compact, a condition not suitable to the soft and tender roots of the plant. If cultivated in a pot, it must be well drained; the pot being nearly half filled with broken potsherds, and the upper layer placed as to cover the interstices, in order to prevent the water from rising with the drainage. During winter

Mexican Cactææ do not require much artificial heat: several species are, indeed, known to bear with impunity a few degrees of frost. Where they can be cultivated by themselves, we recommend that the plants and atmosphere of the house should be kept in a dry state during winter, artificial heat being given only during a long continuance of damp cold weather or in severe frost; but at no time during winter need the temperature of the house exceed 50° at night. In sunny days in spring the house should be kept close, in order that the plants may receive the full benefit of the heat of the sun's rays. As the summer heat increases air should be admitted, and occasionally the plants should be freely watered, and in hot weather daily syringed overhead.—(*Botanical Magazine*, t. 4486.)

FORCING STRAWBERRIES.

HAVING been tolerably successful in the forcing of Strawberries, and ascribing a good deal of that success to the treatment they receive previous to forcing, I send you the mode adopted—the more readily, perhaps, because it differs so materially from the advice given a week or two since by your able and practical correspondent Mr. Fish. The plan is an old one, perhaps, and is adopted elsewhere possibly, but I have not met with it in my travels. It is this: Those plants that fruit in April I allow to bear runners, say six to each pot. When done fruiting they are placed in a cold pit to harden-off; they are afterwards planted out in a well-prepared border, care being taken not to injure the runners at any time when moving them. By adopting this mode the plants are ready to go into fruiting-pots by the 1st of July, three weeks earlier, I presume, than by the plan recommended by Mr. Fish, which I am sure that gentleman will think is an object gained.

The forcing part is quite a different affair; but if you think proper I will send you some account of a plan that secures a crop of large fruit and excellent flavour. I may mention that the plants are not allowed to remain layered in 60's more than three weeks, or a month at most, previous to their final shift into 32's.—J. GROSS, Gardener to D. R. Scratton, Esq., Priory, Prittlewell, Essex.

ON THE WINTER EFFECTS OF COLOURED WOODS IN LANDSCAPE GARDENING.

I do not know that it has ever occurred to others, how much may be done towards rendering a garden cheerful in winter, by employing shrubs with coloured woods in the arrangement of the planting. Downing certainly makes no allusion to it in his "Landscape Gardening," I have often thought of it, and have intended to try something of the kind on my grounds so as to form some idea of the practical effect, but have always forgotten it when the proper planting time came about. It occurred to me again recently through happening to see a Golden-barked Willow and a small nursery of Silver Maple trees side by side. The red and gold together, against the background of snow, that laid on the side hill on which the trees were growing, had quite a pretty effect, though of course you will say better matches of colour could be made than this accident afforded.

How would a mass look having, say, for the outside a thick set of the Red Dogwood (*Cornus sanguinea*), then a circle of the green shoots of the Ash-leaved Negundo, then the red scarlet of the Silver Maple, and the Gold Willow behind, all kept twiggy and dense by pruning?

Perhaps some of your taste-loving readers will communicate their views and experience. No doubt many would be interested—certainly the writer of this.—C., *New York*.

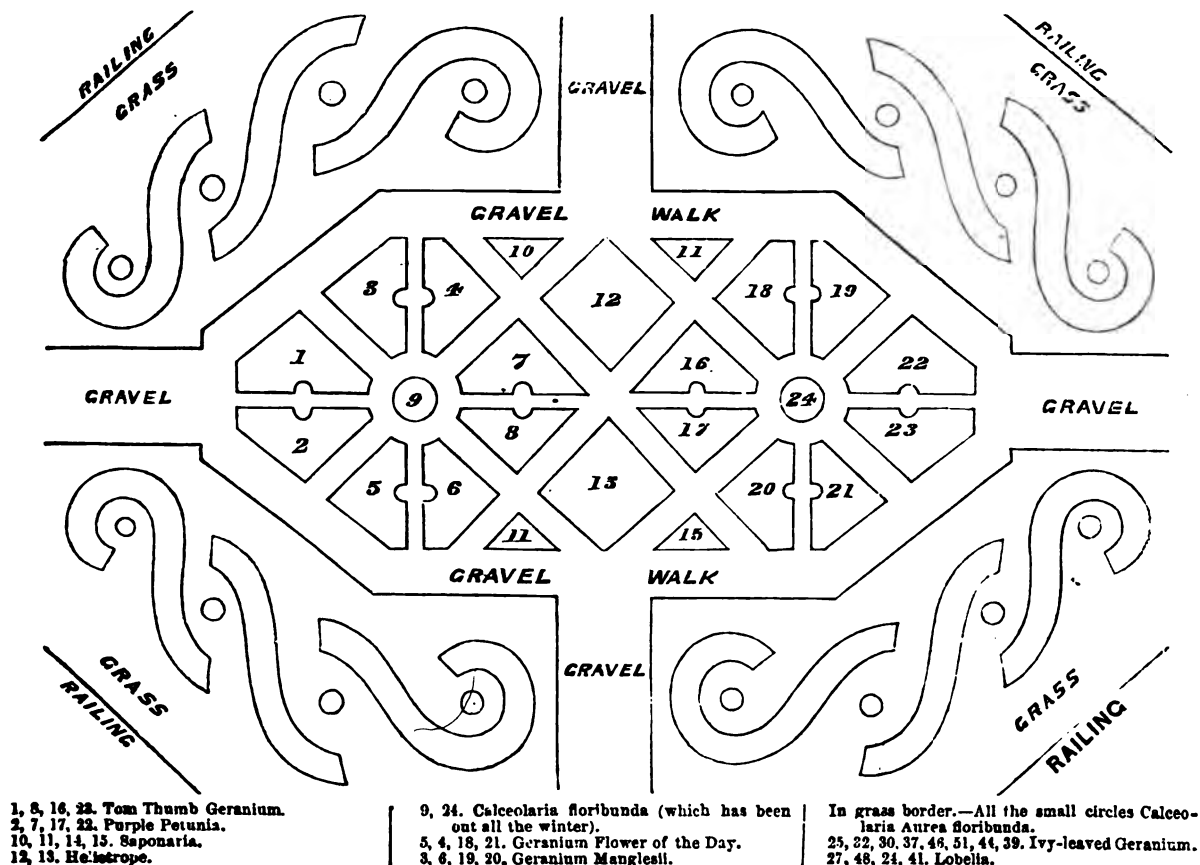
[The idea is novel and has merit in it. The White-barked Dogwood (*Cornus alba*), has the brightest-coloured wood, and is probably the one our correspondent refers to. *Cornus sanguinea* has dull brown wood.—ED. *American Gardeners' Monthly*.]

GRAPES AT GARSTON VINEYARD.—There is such a house of Black Grapes at the Garston Vineyard as is seldom seen, and, I may venture to say, not to be surpassed if equalled in England. I am referring to the house from which Mr.

Meredith cut the Grapes which so astonished the visitors at the Royal Horticultural Society's Garden on July 1st, and for which he obtained the first prize. Perhaps some of your readers are not aware that Garston is six miles distant from Liverpool. Omnibuses leave Castle Street every half-hour for Garston, and excursion trains are running from

nearly all parts of England to Liverpool, affording gardeners a good opportunity of visiting the above place. The other vineries, Pine-pits, &c., are very extensive, and contain very fine shows of Grapes in later stages, but the one house alone is worth a journey of a hundred miles to see.—W. L. K.

PLAN OF ONE OF THE FLOWER GARDENS AT PENTILIC CASTLE, CORNWALL.



HARDY DECIDUOUS TREES.

FINE old trees connect the present age with the many that have gone before it, and remain, as it were, a living chronicle of the many revolutions of society that have occurred during their growth. It is, therefore, with no ordinary interest that we ought to look on such trees, venerable alike in appearance and in the associations they call up, and we ought to regard their loss as that of old friends when accident or misfortune deprives us of them. Fortunately of late years the laudable desire to retain those emblems of the past has greatly increased, as well as the love of other objects of antiquity. There is no reason why an old work of nature should not find the same favour as does an old work of art—a remnant of masonry is certainly not more an object of just interest than an aged Oak. The latter, doubtless, bears the mark of time, and if in a state of decay is looked on with feelings of interest; the other is regarded with regret that the barbarous usage of a former generation should have left us so little of a pile we gaze on with admiration. But old trees and old buildings are not unusually associated together, and nothing can keep company with greater harmony than those two relics of former times: all the wealth of the present day can give that grand building which is often afforded

by the old trees by which another structure of less pretension is surrounded.

How many of the abodes of our nobility are not less remarkable for the venerable appearance of the trees in their parks than for their dwellings. Who has not often heard of, and admired too, the stately Oaks, the sombre Beeches, and magnificent Elms, with which a park is studded? and while the mind is admiring their beauties as the visitor approaches the abode of the owner, a feeling of respect is engendered for bygone generations who have left such legacies to the present one.

Fine old trees also give an importance to a place which wealth cannot command; for however cleverly constructed the machines may be which the various inventors have patented for the purpose of transplanting large trees, fine old ones are beyond their power, and if such trees were even moveable, they are not often articles on sale.

With no ordinary interest, then, ought we to regard fine old trees; and any of our readers who happen to know of remarkable ones for size, would confer a favour on the reading community by forwarding their dimensions. Trees of unusual size are scattered far and wide, and they often enough flourish unknown almost to any but to the limited

residents of the locality. Unfortunately we are all too prone to pass by such things, only noticing in a vague manner that the tree "is a remarkably fine one." We take a walk round it, and a look-up to its top, and then with some exclamation about its great size, too often bestow upon it no more thought. Candour compels me to say that such has been too often all the notice I have taken of such trees; but I often meet with objects of remarkable growth in places not having the reputation of being the best adapted for such things, and I will adopt a different course for the future, for I think a little notice of such trees now and then will be of service to the community at large. The little that I am able to report on the matter is all from personal knowledge except where otherwise stated; but, unfortunately, the information is but meagre, nevertheless it may be the means of inducing others to report more interesting objects in other localities.

Commencing with the acknowledged king of our forests, THE OAK, I think I have seen at least four individual trees each asserting that dignified title. A very fine tree of this kind, which to all appearance seemed likely to require some two or three centuries yet to bring it to perfection, so healthy and vigorous it seemed to be, was at Panshanger, the princely seat of Earl Cowper, in Herts. I have quite forgotten the extent of ground its umbrageous top hangs over, and a finer or healthier tree it would be difficult to find. Some very fine Oaks also adorn the noble park at Dunham Massey, the seat of the Earl of Stamford and Warrington, in Cheshire. These, however, to the best of my recollection, were more remarkable for the fine timber they contained than for any remarkable extent of top; but there were plenty of tall, fine, bold trees having a circumference of 15 feet and upwards at 5 feet from the ground; and a very large park was very heavily wooded with such trees. The soil seemed sandy; and if dry, the fall of rain in the neighbourhood, being greater than in most places, supplied the moisture, but I do not think it was deficient of that element. I was told there was a king of the forest here, but I had not the opportunity of seeing it; still the great number of fine trees astonished me. Next to the Oaks the Beeches were numerous and good, and other kinds were not wanting. Further northwards there is some tolerably good Oak timber in the best districts of the county of Durham; and one at Gibside, on the property of the late Earl of Strathmore, but I believe now Mr. Bowes', contained something like eleven loads of timber some thirty years ago. This tree was growing in a wood and was near the bottom of a slope, the soil a sort of hazel loam rather plentifully mixed with stones. It was a much less healthy tree than the one at Panshanger, but might, perhaps, contain more timber, and its top was not remarkable; in fact, some of its limbs had been broken off by high winds. I believe there are several places in Yorkshire remarkable for fine trees, but I have not visited them, and, therefore, leave their description to other hands; and Scotland has also its monarchs of the forests. An Oak at Netherwitton, in Northumberland, was once pointed out to me as good, and certainly it seemed of great size, but I forgot the particulars; and many districts, doubtless, would have had their fine trees at the present day had not the temptation to cut them in time gone by been so great as to tell seriously against their preservation. Even parks of established antiquity have at some period or other of their history been denuded of their ornaments by some needy or avaricious proprietor; but remarkable Oaks are of frequent occurrence, less perhaps so than Beech: the latter being a less valuable commodity in the market, there was not that inducement to cut for sale. Some fine Oak trees adorn the park of Knowle, Kent, but those of Cobham in the same county are evidently of a more recent date. Every one has heard of the fine Oaks of Windsor Park, and many other places may be cited as containing good specimens.

Next in importance to the Oak as a park tree is THE BEECH, and in habit of growth it is scarcely less beautiful—in fact, it is not unlikely that if we could divest ourselves of the poetic feeling attached to the Oak as being connected with our national greatness, it is not unlikely but the Beech would be regarded as the more noble in its growth. The habits of the trees are not so much unlike: a wide expanded top, with a bole more or less branched as the position of the tree may be determined. But my purpose is not

to make the comparison, but to describe some remarkable trees, asking at the same time for other contributors to record their observations as well. In the first place, I may say that I regret very much not availing myself of the chance I once had of seeing the Burnham Beeches in Buckinghamshire, which are reported to be such fine specimens of the ancient Beech. There are, however, some fine trees in other counties. The fine park of Knowle, above alluded to, contains some fine avenues of Beech, as well as groups, and single trees innumerable; some are of remarkable size, but the bulk are still in what may be called excellent timber-condition. Several stages beyond this state, however, have the Beeches advanced in the park of Sir Percival Dyke at Lullingstone in the same county; some that I measured being little short of 30 feet in circumference at 4 feet from the ground; and by their appearance they looked as if they would outlive several generations yet of the human race. A dry hilly situation with chalk underneath was their abode. Beeches are also common in many places, not the least remarkable being some places in Bedfordshire and the adjoining counties.

THE ELM is a greater favourite with the farmer than with the poet, not that the farmer likes its presence any further than that the district where it grows spontaneously indicates good land. I believe the vale of the Thames contains some of the best Elm trees in the kingdom, and I have seen very good specimens in Oxfordshire. A good, rich, and deep soil suits this tree best, and on such a soil its growth is, perhaps, quicker than that of any tree we have, unless it be the Horse Chestnut. Elms are, however, not so long-lived trees as the Oak, Yew, Beech, and others; for when decay sets in they much sooner succumb to it. We seldom see a hollow Elm, for the decay at the bottom eventually increases so as to weaken the collar, which gives way before a high wind, and down the tree comes. Unlike those trees mentioned, it does not appear that the root makes any effort to sustain the declining condition of the trunk by surrounding the remaining sound wood with bark, and a fresh accession of layers. Instead of this the Elm root often decays also, or if left to a state of nature some rising suckers abstract all the nourishment. Elms furnish more suckers than most other trees, and to this, doubtless, may be attributed the shorter period of their existence as compared with these. Elms make an excellent avenue, and even as individual trees they look well; the expanded top and large sturdy limbs, striking boldly out in all directions, give the tree a noble appearance in autumn and winter. Its roots travel a long way for food, and quickly appropriate to themselves a heap of compost, mould, a flower-bed, or anything tempting that comes in their way, in which case they rob their neighbours. A corn field is not unlikely to suffer from this cause. But the noble proportions of the tree entitle it to respect; for I should think that no other forest tree we have arrives at the size the Elm will do in a suitable soil. One in the grounds here (Linton), which seems perfectly sound, and likely to increase in size for many years to come, is upwards of 16 feet in circumference at 5 feet from the ground, and apparently loses very little in thickness at 20 feet up. There are several others of about the same dimensions. A good rich soil, not too shallow, suits the Elm; and its presence, like that of Nettles, often indicates a generous soil.

J. ROBSON.

(To be continued.)

FLORA OF THE ROMAN CLASSICS.

(Continued from Vol. III., page 703.)

THE ESCULUS OR ÆSCULUS.

THERE is much uncertainty among modern authors as to the tree mentioned under this name by the Roman writers. After gathering together what these have stated concerning it, we shall be better able to decide what tree known to us agrees with the characteristics they ascribe to the Esculus.

Palladius says, "The Esculus is suitable for building and for Vine-props. Quercus timber should not be mixed with that of Esculus, for that of the Quercus if wetted will warp when it begins to dry, causing chinks in the floor, but that of the Esculus continues without such a blemish."—(*De Re Rustica*, i., 9, and xii., 15.)

Virgil says, "Some trees are produced from sown seeds,

as the lofty Chestnut; the Esculus, which is the largest that flourishes in the groves of Jove; and the Quercus, reputed oracular by the Greeks."—(*Georg.* ii., 14-16.)

Pliny observes, "The Quercus and the Robur (probably our Quercus racemosa and Q. robur), we see growing everywhere, but with the Esculus it is otherwise." "The acorn, properly so called, is borne by the Robur, Quercus, Esculus, Cerrus, Ilex, and Suber." "The Esculus is dedicated to Jove." "It ripens its acorns in the autumn." "It is impatient of a wet soil."—(*Nat. Hist.*, xii., 1.—xvi., 6, and 26 and 41.)

Horace refers to the hardness of its wood when he says that the obduracy of Lyce was "not more yielding than the unpliant Esculus;" and he alludes (*Odes*, i., 22), to "the spacious Esculus woods" of Daunia, a portion of the Neapolitan territory bordering on the Adriatic.

In the Georgic already quoted (lines 291-2), Virgil says, "Esculus tends towards Tartarus with its root as far as with its head towards the ethereal regions." Now, in our present inquiry, it is very significant that in the 4th Æneid Virgil makes the same descriptive observation, repeating every word, when speaking of Quercus.

Ovid characterises the Esculus as having "lofty leafy branches."—(*Metam.*, viii., 410—x., 91.)

Pliny also states that for Vine-pros it was cut every three years, that it is produced from an acorn, that the props are least of any liable to decay, and that cutting it freely makes it produce shoots more abundantly.—(*Nat. Hist.*, xvii., 20.) The best and largest acorns, he also says, were borne by the Quercus, and the next by the Esculus—(*Ibid.*, xvi., 228.) The civic crown was first formed of sprays of the Ilginus, but subsequently of the Esculus, sacred to Jove.—(*Ibid.*, xvi., 4.)

These scattered details lead us to the conclusion evidently entertained by the Bauhins, Parkinson, Ray, and Linnæus, that the Esculus of the classic writers is the Oak now known as the Italian or Prickly-cupped Oak, *Quercus esculus* of some botanists, but probably identical with *Q. pubescens*. Its leaves are numerous, are about 3 inches long, and 1½ inch wide, on footstalks nearly 1 inch long, with shining surfaces paler beneath than above, finely veined, and disposed alternately on the sprays. They are well suited to forming the honorary head-wreath bestowed by the Romans. The acorn when full grown is about an inch long, and its scaly cup about one-third of that length. It is sweet and eatable, so much so as to be brought to table roasted both by Spaniards and Italians in country districts. There was a tree of this species in the Horticultural Society's Chiswick garden which Loudon records as having borne crops of acorns. We have inquired about this tree; but, like many others, it seems to have been recklessly cut down by Mr. McEwen.

Few people are aware that acorn is only an abbreviation of ac-corn, or oak-corn, a name justified by the prevalent use of some kinds of this mast in remote ages. Even now the acorns of *Quercus ballota* are sold both in an uncooked and roasted state in the markets of Algiers, and are a common article of food with the Moors.

Quercus esculus is not so abundant in Italy as some of the other species, but is found perhaps more frequently in the countries bordering on the Adriatic. It is lofty, though not one of the loftiest of the Oaks, averaging 40 feet when full grown. The soil in which it flourishes best is a well-drained, rich, sandy loam. It still bears the name of Eschia and Esculo (according to Parkinson), in Italy.

M. Tenore says that there is a very fine variety of the *Quercus robur* found in the woods throughout the kingdom of Naples, distinguished by its large leaves, and which is there called the *Chêne Castagnara* (Chestnut Oak). It was formerly known under the name of the *Quercus latifolia* (Broad-leaved Oak). This has been considered by some the *Esculus* of Pliny and other Latin writers; but Tenore expresses himself as certain that that is the *Quercus esculus* of Linnæus.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE July Meeting of the Entomological Society, held on the 24th inst., with the President in the chair, was more than ordinarily interesting. A considerable number of donations

to the library received since the last Meeting from Vienna, Munich, Stockholm, Königsberg, France, &c., were laid upon the table, the Society being at length resolved to concentrate its forces on its library and publications. A notice to this effect, and that it had been resolved to dispose of the remaining portion of the Society's collections, including the British insects, was given by the Secretary, it having been found impracticable to form even a tolerably perfect indigenous collection, whilst the expenses attending its preservation and exhibition were more than equivalent to the benefit resulting from its retention.

On the motion of Mr. Dunning, it was resolved that the thanks of the Society be given to W. W. Saunders, Esq., F.R.S., Treasurer of the Royal Horticultural Society, &c., for his liberal entertainment of the members at Reigate on the 22nd ult., when an interesting entomological excursion in that charming locality, planned by Mr. Saunders, was joined in by a large number of the members, and some interesting captures made during the day were exhibited by several of the members present at the July Meeting.

Mr. Stevens exhibited a case of rare insects collected in South Australia by Mr. George French Angas.

Specimens of the beautiful *Carabus auratus*, long esteemed a doubtful British species, were exhibited by Mr. Brewer, recently taken on the coast of Kent between Dover and Hythe. Unlike the other British species of the genus, they are found running about during the day. It was, however, stated that the late Mr. Walton had imported and turned a number of French specimens of the species loose twenty years ago between Dover and Deal, whence it was possible that the recently-captured specimens might be the descendants of some of these imported individuals.

Mr. Stainton exhibited specimens of *Elachista apicipunctella*, one of the Tineidæ, bred from larvæ found in the leaves of a *Festuca*, although ordinarily they mine the leaves of *Holchus lanatus*.

Professor Westwood, in reference to the curious hermaphrodite Honey Bees exhibited at the June Meeting by the President, stated that a long account has been published in the "Transactions" of the newly-established Entomological Society of Switzerland of a hive of Bees which for several years had produced a number of such monstrous individuals, a fact which appeared to militate against the theory of parthenogenesis. He also exhibited drawings which he had recently made at Dresden of the larvæ and pupæ of the anomalous genus *Coronis* contained in the fine collection of Dr. Kaden. He also gave a description of the preparatory states of the equally curious genus *Castnia*, of which the larva resembles that of the longicorn Beetles, whilst the pupa is very similar to that of *Cossus*, with rows of reflexed hooks on the dorsal segments. He also exhibited specimens of *Gracilaria rufipennella*, a small Moth, the larvæ of which during the past month of May had been very injurious to the foliage of the Walnut in Southern Tyrol, the trees having the appearance of having been scorched with fire. This fact was the more remarkable (being quite unknown to the Vienna entomologists), as the ordinary food of the larvæ are the leaves of the Plane tree. He also exhibited specimens of *Eucheira socialis* in the perfect state. This Butterfly had hitherto been known only by the description which he had published thirty years ago of the family cocoon formed by the larvæ within which the chrysalids are suspended in society. He also exhibited specimens of the two sexes of *Papilio Castor* and *Pollux*, which had been erroneously regarded as sexes of one species, and also produced photographic representations of a remarkable hermaphrodite specimen, proving the correctness of his separation of the two insects.

Mr. Stainton gave an account of the discovery of the larvæ of *Micropteryx fastuosella* in Nut leaves on Marlborough chalk downs. He also stated that he had been called up to award the entomological prize at Marlborough College for the best collection of Lepidoptera, and that there were seven candidates for the prize.

Mr. F. Moore exhibited some Galls on Elm leaves, caused by the punctures of a species of *Aphis*; and Mr. Dunning, a white silky secretion found deposited over a quantity of Chicory, probably by the larvæ of some species of Tinea.

Mr. Burchall exhibited several specimens of *Dianthæa capsophila*, and the Rev. Mr. Marshall brought a number of

the rare *Platyrhinus latirostris* for distribution among the members.

A paper was read by Mr. Pascoe containing descriptions of sixty new species of Australian longicorn Coleoptera, and another by Mr. F. Walker, containing descriptions of new Sphingids and *Aegerids* in the British Museum collection.

Professor Westwood moved, and Mr. Stainton seconded the following resolution, which after considerable discussion was carried unanimously:—"Considering the state of the entomological collection of the British Museum, and the vast accessions still unarranged which it has recently received, rendering it the most valuable collection in the world, but which requires the services of more than one person skilled in the science of entomology for its due classification.

"Resolved, that the nomination in the stead of Mr. Adam White, of a person previously employed as a transcriber in the printed-book department of the Museum, entirely unknown as an entomologist, cannot but prove a great detriment to the progress of the classification of the collection, as it virtually is a waste of the public money. This is still the more objectionable, as several good and competent entomologists were candidates for the situation."

It was also resolved that a copy of this resolution should be forwarded to the Trustees of the Museum.

WORK FOR THE WEEK.

KITCHEN GARDEN.

CLEAR away haulm-stumps and the refuse of crops as soon as they are over, and if the ground is not required, dig it over, to remain till wanted. At this season, however, there is seldom ground to spare; for it should be remembered that the supply for several months of the next winter and spring will depend in a great measure on the diligence now made use of in planting-out as large a supply of those kinds of vegetables most likely to be in demand as can possibly be found room for. *Broccoli*, any that are now planted in dry weather to have their roots dipped in puddle consisting of soot, earth, and water, and after planting to be again watered. The Cape and Grange's intended for use in the autumn to be also watered; but the spring roots when they have got hold will not require it. *Cabbages*, there should now be no delay in getting in the main sowings for spring supply. Bailey's is an excellent variety, to which may be added the Nonpareil, Vanack, East Ham, and the London Market. The first sowings to be pricked-out into nursery-beds: it is to be preferred to leaving them in the seed-bed, as it makes them stocky and well-rooted, and, consequently, better able to withstand the severity of the winter. *Carrots*, a few of the Horn may be sown to stand the winter; but another sowing should also be made towards the end of August. *Celery*, abundance of water to be given to that newly planted, and to the earliest crop copious applications of liquid manure with a small portion of salt dissolved in it. *Lettuce*, make a sowing of Cos and Cabbage for late use. *Onions*, the tops of the early crops to be laid down if they are inclined to be too rank, going over the bed or rows with a wooden-headed rake, and pressing the tops down sufficiently to check farther growth. *Turnips*, another sowing to be made; if the weather is dry the ground to be watered after the seed is sown, and covered with mats or any other temporary shading. Vacant ground, or that which can be cleared of early crops, may be planted with Winter Greens, &c., first giving it a good dressing of manure and a deep digging. When ground is limited the Potatoes and other crops soon coming off may be interlined with *Broccoli*, Winter Greens, &c., and, further to economise space, a quantity may be planted at a foot apart, to wait for ground as it comes in by the removal of other crops, when the whole may be again planted at proper distances, or every other row and each alternate plant of the remainder may be removed to vacant ground.

FLOWER GARDEN.

The late-planted flower-beds to be looked over, and the plants either pegged-down or staked-up as their habits may require, or as may best suit the taste of the cultivator. Those which are planted against basket-edgings, or against framework which is used to intersperse beds, to have their shoots neatly arranged and tied in. All decayed flower-

stems and leaves to be removed; all plants done flowering to be cut down, and annuals that have ceased to be gay to be pulled up, and their places filled from the reserve stock. Proceed with the laying of Clove and other border Carnations. Mule and Anne Boleyn Pinks done in the same way will make strong healthy plants before winter. All seed-vessels which may have been left on the Roses during the flowering season to be cut-off. Autumn-blooming sorts will be much strengthened and bloom better during the next three months if partially pruned and well soaked with manure water. The ill effects of boisterous weather will be experienced in the flower garden if prompt and effective precautions be not employed to guard against its action—staking, tying, &c., should be assiduously followed up; *Dahlias*, *Hollyhocks*, *Pelargoniums*, *Petunias*, and *Calceolarias* may be specially named as susceptible of injury from wind and rain. Rose-budding to be actively proceeded with. Fork the ground slightly around *Dahlias*, and mulch the surface with very rotten manure; water plentifully two or three evenings in the week when the weather is dry; the laterals to be well staked-out, and every means to be used to entrap earwigs. *Ranunculuses* and *Anemones* should all be out of the ground; if showery weather set in they will immediately emit roots, when their removal would be injurious.

FRUIT GARDEN.

The summer pruning and nailing-in of the current year's wood will require following up; the late rains have caused an increased growth of midsummer wood, which may be allowed to remain for a short time till the growth becomes less active, before stopping or cutting-back is resorted to. Top or remove the rampant suckers of *Raspberries*, and attend to the Strawberry planting.

GREENHOUSE AND CONSERVATORY.

Remove the flowers of *Aphelaxis* and *Helichrysums*, cutting the flower-stems close in to the old wood, then set them in a cool shady place; when they begin to grow, such as require it, to be repotted. *Kalosanthes*, the flowers of which are getting shabby, to be cut-in below the blooming branches. Attention to be paid to late-growing plants in the borders of the conservatory; for while in active growth they require a good deal of water. Adequate precautions to be taken to protect the tender greenhouse plants placed temporarily out of doors from the effects of the frequently-recurring storms of wind and rain. The pots to be closely examined lest the plants suffer from defective drainage or the presence of worms. Cut-down *Pelargoniums*; pot-off cuttings directly the roots are formed; repot those plants previously headed-down as soon as they begin to break. Shift and sow *Cinerarias* and *Calceolarias*. The stock of pot *Roses* to be looked over, useless wood and decayed blossoms removed, and the plants shifted if they need it. The *Teas* are admirably adapted for pot-culture; a little heath soil to be mixed with the compost, which should be very rich in decomposed nightsoil or rotten dung, chopped turf of a rich loam, with a sprinkling of pounded charcoal or sparkling sand.

STOVE.

Watch closely for insects. *Ixoras* done blooming to be cut-in, and started gently. The *Orchids* suspended in baskets or on blocks will require a liberal supply of moisture. All blocks will need frequent, though light, syringings, and let as much fire heat be kept up as will allow of a quiet circulation of air.

PITS AND FRAMES.

Propagation of stock for next season must soon be commenced and carried on with expedition, so as to secure strong well-established plants before winter, and without the necessity of keeping them so close or warm as to induce weakly and watery growth. Begin with such as are found to be the most tedious to propagate, and prepare for winter.

W. KRAKE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

MUCH the same as last week. Hoed the ground between crops—weeds or no weeds, for the easiest way to keep clean is

not to allow weeds to grow an inch in height. Sowed fresh patches of Endive, Lettuce, Turnips, Radishes, Onions, and Spinach. The Spinach will be the last we will sow until we sow for the winter in a fortnight. Sowed also Matchless Cabbage for the main early crop, a few Red Cabbage, and a pinch of Cauliflower, in case it should be needed. Were pretty well done up for water; but Tuesday and Wednesday brought us delightful rains, that set us planting Coleworts, Broccoliis, Borecoles, Brussels Sprouts, &c., and Celery, that formerly planted having been well watered from the heavens. With warm weather after the rains everything will grow amazingly. Corn will fill the bushel, and Turnips will soon protect themselves.

Pricked-out Parsley in beds where there were missed places, and sowed a little more to go under protection. Regulated Tomatoes, Capsicums, and Cucumbers, letting the latter get a good watering from the rain. We had been obliged to shade those in frames to keep the sun from them, as we dreaded to give them any water. Now we shall be all right again for some time. Spawnd a bit more of a Mushroom-bed, and covered with fresh droppings and a little sheep-dung. The first bed in the shed is doing wonders, though made of rubbish chiefly. Peas and Beans, and Cauliflowers will now be all right. With all our care we could not prevent the latter heading prematurely, and the dry heat caused the heads to come more open than we like. For several hot days the butterflies were in myriads; but as some boys caught several hundreds, we hope to escape a glut of caterpillars among the vegetables. Raised early Potatoes before the rain.

FRUIT GARDEN.

Removed nets from Cherries and Strawberries that were gathered, and put them on Gooseberries, &c. This rain will give soft food to the birds, and we shall not be quite so much eaten up. For a week in the dry weather the bird-fanciers might have had a treat. A clap of the hands, or the snap of a gun, would cause some half a hundred of thrushes and blackbirds to darken the air, singing out defiance to you as they rose and just cleared the wall. We fancied they would not meddle with a border of Elton Strawberries planted as undergrowth in a late border of Gooseberries, because the aforesaid Strawberries are rather sour; but though the Gooseberries are untouched, they have pretty well cleared the Strawberries in a day. When once they tasted them it was all up—they were busy at them by three in the morning. We notice to-day that they have begun to look after slugs and worms below Laurels, &c., and we wish them every success in their beneficial change of occupation.

Gathered the bulk of Black Currants, and especially Raspberries, as otherwise the birds would have had the whole. There will be a good supply after the rain. Regulated fruit trees, fastened Fig trees out of doors, watered those in house, watered Vine-border before the rain came, and gave a little fire heat to late Grapes, to prevent them being chilled by the change in the weather. Other matters much in the way of routine of previous weeks. Before watering the Vine-border, as the crops are heavy, threw a bushel of soot, and more than a bushel of superphosphate of lime over the border. The rain coming soon after has left no appearance of the manures on the surface. Would have given a few pounds of the nitrate of soda, if we could have obtained it conveniently, just to give a fillip to the foliage in the later houses.

ORNAMENTAL DEPARTMENT.

The rain has changed the appearance of everything. The lawn had been knifed several times to decapitate a stray daisy or plantain; but it was beginning to get such a rusty appearance that we were afraid to make it worse by passing a mowing machine lightly over it. We never knew a lawn need so little doing to it for the last month. Now it will get as green as leeks again, and will require our cropping care after being well rolled. The same as to beds. Calceolarias that were beginning to hang their heads, notwithstanding our efforts at mulching and surface-stirring, are now holding up their masses of flower boldly, and the rain has as yet come so mildly that scarcely a bloom has been washed off. We hardly expect that any sorts of flowers will

again suffer so much from drought this season; and if the autumn be fine, from all we have heard and the little we have seen, flower-beds will be very attractive this season. The *Amaranthus melancholicus* does no great things with us out of doors, but it is a nice plant for a cool plant-house. Some amateur would make a sensation by filling his little greenhouse with fine-foliaged plants alone. After this the whole of the fine-foliaged *Begonias* will stand well in a greenhouse, especially if the position is a little close and shady.

Kept striking Pinks, Cloves, Carnations, Antirrhinums, &c. Now is a good time to lay Carnations and Picotees. They do not strike well as cuttings or pipings unless they have a little bottom heat. Secured Hollyhocks, Phloxes, strong herbaceous plants, Dahlias, and other flowers needing support, and stuck a pin in the top of a good number of stakes to prevent birds sitting on them and sending their droppings over the foliage. Robins and linnets are rather the worst birds for doing this, and they are not easily dislodged from their favourite perch. Some birds will take the hint if you have even the head of the pin uppermost, but others will wriggle round the pin unless you place the point upwards, or, at least, take off the head, and in either case the little things are apt to be injured, which we would avoid doing if we could.

Removed a portion of the foliage from some of the Dahlias, or rather shortened a few of the leaves in order to give more relief to the flower-buds, and throw additional strength into them. A little disleafing of extra-luxuriant plants will secure extra abundance of bloom. Went round some edgings of *Nasturtium* for a similar purpose. The stems of these are so succulent that they will bloom all the better from not having too much foliage. We have some good wreaths of some kinds; but others are as yet rather unequal, owing to a little neglect in the warm weather. These plants generally grow so strong that we did not think of watering them, and some plants are three times the size of others. The large ones will fill all the allotted space if we only give them time enough; but, to our eye, one great beauty in flower-groups is their regularity, from whatever point viewed. Regulated most of the *Geranium*-beds before the rain came, and will finish these and others as soon as the soil is a little dry; and in doing this and keeping edgings distinct, much more time is required than a passing visitor would imagine. We find even now it is necessary to insert a plant now and then, though very few have died this season, hot and dry though it has been.

In most cases all our brushwood sticks, or stakes, are now concealed. Our walks, which had not been broken for years, were firm and smooth on the surface; but the surface in many places was of a dull colour, and to remedy it we threw a slight sprinkling of fine-sifted salt all over them, and then a slight sprinkling of fine siftings of gravel, which, when swept, would give a fresh appearance to the walks; after that the passing of a roller, as we did to-day after the rain, would secure as firm and smooth a surface as before. Now these simple operations are the result of experience. Supposing we put the salt on, and a sudden rain came, it would be washed away, and do no good in clearing off the dark patches. Supposing the salt remained and was absorbed gradually by the dews, the walk would be apt to be damp and cloggy in moist weather. Now the throwing the fine siftings over the salt—and we only had very little altogether—prevents the salt being washed away, and then it is gradually absorbed, whilst the fresh surfacing secures a dry, clear, firm surface to walk upon. We should not like to use salt for cleaning walks after next month, as we should expect them to be damp all the winter.

Potted Scarlet and other *Geraniums*, *Pelargoniums*, &c. Sowed *Primulas* and *Cinerarias*. Pricked-off first sowings of *Cinerarias*. Potted Chinese *Primulas*, *Cassia corymbosa*, Feathered Cockscombs, *Browallias*, *Gesneras*, &c.; and fresh set conservatory, taking away most of the *Pelargoniums*, and replacing with others, *Fuchsias*, and a bank of *Begonias*, &c., in a shady place. Regulated climbers, and gave them extra watering, as *Bignonias* and *Passifloras*, &c., were beginning to feel the drought. Went on with watering, potting, and cutting-making as opportunity presented itself, and found it a relief to have a dripping day to get pots and pans properly washed.—R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

APARAGUS PLANTS DYING (Gallier).—Some of the plants dying, whilst those which live produce very fine heads, and the soil being tenacious, lead to the conclusion that there is stagnant moisture in the beds. We would put in drain-tiles, 3 feet below the surface, on each side of the beds, and if you can have no other outfall sink a hoghead at one end of the beds, and let the drain-pipes empty themselves into it. You cannot do better than remove the surface soil as you propose, but instead of sifted ashes use a mixture of equal proportions of sandy loam and thoroughly-decayed stable-manure. Add this when you dress the beds in the autumn, but drain at once, and apply salt at any time. Your *Lapageria rosea* requires a large and constant supply of water.

GRAPES SHRIVELLING (A Constant Subscriber).—Give the roots of the Vines a good soaking once a week with tepid water. Previously to beginning to do so remove the surface soil down to the roots, and in its place put a mixture of equal parts light loam and decayed stable-manure. Give more air day and night. We know of no better mode of preventing the roots of Raspberries rambling except digging a trench down the side of the plantation and ramming it full of stones.

GRAPES SHANKING (One in a Fix).—Remove the surface soil down to the first-occurring roots. Refill with some rich compost, and water freely with tepid water. Give more air, and keep the house at least 5° cooler both during the day and the night.

WORK DESCRIBING PLANTS (Cæsaræa).—London's Encyclopædia of Plants nearly coincides with what you particularise. It describes them, has woodcuts of some of each genus, and though not alphabetically arranged there is an index.

VINE LEAVES SPOTTED AND GRAPES PARTIALLY SHRIVELLED (Nescio).—There is most probably a deficient root-action. Remove the soil down to the first layer of roots, replace it with a compost of equal parts light loam and well-decayed stable-manure, and then water copiously with tepid water.

CLIANTHEUS DAMPIERREI.—Clapton will be obliged by "JUVENIS," whose remarks were published in page 25, stating when he sowed the seed of this plant.

PLANTING A VINERY (S. H. S.).—About five Vines will be enough for your vinery, 31 feet long. If planted inside at back, the floor should not be covered, so as to intercept the sun's rays. If planted inside in front, and the roots allowed to go into an outside border, the plants will always be protected as respects their stems; but in planting in this way the inside border should always be higher than the outside border. If the border outside is new good loamy soil, and not exhausted, it may grow Vines well enough with the help of a little rotten dung, lime rubbish, and some eight or ten bushels of broken bones incorporated with it. As you have 2 feet of wall up to the wall-plate now, we would not take out much soil if we made a fresh border entirely; but we would take off 1 foot, if we even used part of it again, ram and concrete the bottom, dig a drain in front 2 feet deeper than the concreted bottom, put drains across the concrete, and place a foot of rubble over it, which would leave about 20 inches of soil up to the wall-plate. The best soil is brown mellow loam from the top spit of a pasture, mixed with brick rubbish and manured according to the richness or poverty of the soil. Bones are the most lasting manure. Part of the border next the house may only be made at first. The Vines will do as well if they have a fresh piece added every year.

GRAPES DISEASED (J. M. Miller).—The berries are "shanked"—that is, their stalks are gangrened and dead. We believe that the best treatment you can adopt is that which we have recommended to another correspondent whose Grapes are shrivelled.

GRAPES MILDEWED (N., Gloucester).—The Grapes are very severely mildewed, which is "the Vine disease." You have let it have its course too long unchecked. Dust the whole of the bunches and leaves with flowers of sulphur. Brush the stems and branches with a paint made of sulphur, clay, and water, and sprinkle flowers of sulphur also over the surface of the borders. When the sulphur has been on the Grapes for four or five days syringe them freely; and when the berries have dried again repeat the sulphuring. Continue this routine until the white mildew (*Oidium Tuckeri*), is no longer discernible on any of the berries.

HEATING A GREENHOUSE (T. P.).—There can be no question as to your securing more heat by running the flue along the back of your greenhouse. In fact, for such a small place as 22 feet by 9, we would be satisfied with a good flue. We have no fault to find, however, with the adjunct of the boiler; but we would advise you to have three or four-inch pipes instead of two-inch pipes. As you purpose to divide the house, it would be as well if you could cause the water to circulate in the first division without going into the second, except when you wanted, which could be easily done, and then with the flue, hottest next the furnace, and the hot water in addition, the division might be very hot, whilst the other was comparatively cool. If you did not do this you could regulate heat by air.

ERYTHROLÆNA, &c. (W. W.).—*Erythrolæna conspicua*, or Mexican *chistie*, still bears that name; but *Renealmia nutans* is now called *Alpina nutans*. The latter we know is in cultivation, but we have no information relative to the Mexican *chistie*.

CUCUMBER (C. S.).—The double Cucumber you sent is not usual, but we have seen it before. It is produced by two ovaries coming in very close contact when young and continuing their growth together.

MAIDEN-HAIR FERN (J. I. C., Dublin).—It is not necessary to repot it every year. As it is in a 16-inch pot or pan and you do not wish it to have a larger tenement, cut away a portion all round, remove a little of the surface soil, and fill up all the vacancy thus made with fresh soil. If you do this annually it may remain in the 16-inch pan for years.

CULTURE OF BORONIAS (A Subscriber).—We fear "watered occasionally" is the cause of your *Boronias* dying. They will not endure stagnant moisture, neither will they endure dryness, and more especially if the pot is pretty full of roots and exposed to the fierce sun we have lately had. The soil you used, peat and charcoal, is all right. The temperature in winter should be not below 45°, or from that to 50°. Let good drainage be secured, and some broken pots might be mixed with the charcoal in the soil. When forming buds and flowering a good supply of soft water would be needed. When done flowering, and the flowering-stems pruned off, keep the plants dryish but not dry for a fortnight, just slightly syringing overhead morning and evening. After that give a little more water, and place the plants in a mild forcing-house, or in a close shady place in the greenhouse to encourage fresh growth. As growth advances give more air and light by degrees, until by August the plants stand in the full sun. Then, however, the pot should either be protected from the full force of the sun's rays, or be set in a larger pot with a little moss inserted in the opening at the top. We fear that dryness and sun together have killed your plants.

ORCHIDS (An Orchid-lover).—You are right in your intention to visit the nurseries you name, as well as Kew. There are no Orchids at Chiswick, and you can only obtain admission to the Kensington Gore Garden by a Fellow's transferable ticket, or in company with a Fellow. When in London, if you furnish us with your address, we may be able to aid you.

GRAPES (Tom Brown).—Your Grapes are the Dutch Hamburg, and there is no doubt but that they will become sweet and eatable; but have you not too heavy a crop? Possibly that is the cause of their not colouring and acquiring flavour more rapidly.

HOUSE-SWAGE (Z. Y., Godalming).—Such a sized garden and so copped needs scarcely any manure. Some of the "slops" might be given to the Rhubarb once a week undiluted; and some to the fruit trees that seem in want of vigour. You cannot employ all the sewage.

BOOK ON VINE-CULTURE (P. B.).—Hoare "On the Vine" is entirely confined to out-door culture.

NAMES OF INSECTS (J. R. Jessop).—The Lime-tree leaves had been infested with the plant louse, *Aphis Tiliæ*, which had been devoured by the larvae of the two-spotted lady bird, *Coccinella bipunctata*, of which the pupæ were affixed to the undersides of the leaves. These pupæ, being attached by the end of the body to the leaf, on being disturbed lift themselves up like a large-hammer as you notice.—W. W.

NAMES OF FRUIT, &c. (Constant Reader, Dublin).—1, Your Plum is the Myrobalan or Cherry Plum, only fit for tarts; 2, We have never used, or known any one else besides yourself who has tried, Dumont's powders. We should be glad if some of our readers would give us their experience of them; 3, You will find very good instructions for the cultivation of *Lapageria rosea* in No. 33 of our New Series; 4, *Rhododendrons* and *Kalmias* that have done flowering in-doors should now be turned out if they have completed their new growth, and placed in a moderately shady place.

NAMES OF PLANTS (Sarah).—Your Oaks are—1, *Quercus alba pinnatifida*; 2, *Q. alba pinnatifida*; 3, *Q. coccinea*; 4, *Q. alba pinnatifida*; 5, *Q. aquatica*. (*C. R. C.*)—*Fagus sylvatica heterophylla*. It is a variety of the common Beech, and the branch at the top is a return to the normal form. (*C. Barwell*.)—*Cestrum aurantiacum*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

WORCESTERSHIRE POULTRY SHOW.

JULY 21st–24th.

THE "fidelis civitas,"—and a "faithful city" it was to the Stewarts—has during the past week been a town of banners and rejoicings. The usual accompaniments of dancing-booths, beer-houses, concerts, wild beasts, and rifle-galleries, followed the Royal Agricultural Society of England. Poultry is an elevating pursuit; and although the Royal Agricultural quarrelled with it, and gave it the cold shoulder some years ago, yet it took high ground. It forgave; and on the principle of doing as it would be done by, it took its station on the threshold, and added its attractions to the many others. It, doubtless, sent many to the showyard, and had to thank it for some visitors.

The place was well chosen. On a slight acclivity immediately facing the Agricultural show-yard, the Committee had pitched a large square tent. Square commodious pens were fixed on every side; and with the exception of Ducks, Geese, and Turkeys, which were of necessity on the ground, all pens were in single tier. Four rows running from side to side filled the centre, making up the number of nearly three hundred pens, exclusive of Pigeons, and affording ample space for visitors between the rows. The spot was well chosen, and the efforts of the Committee met with a reward in the pleasing coup d'œil afforded by the Show on entering.

Game headed the list. It is not wonderful it should be so. Worcestershire has for many years been in the front

with this breed, and some of the birds shown were worthy of the old reputation, while none of them were inferior. The names of the successful would be a guarantee for the merits of the birds. Among others, the Brown Reds of Mr. Fletcher were very meritorious. We preferred them to the first-prize Black Reds belonging to the same gentleman. Mr. Dyas and Captain Wetherall also deserve mention. The Duck-wings were excellent, especially the old birds; and among the Open class for Game, it is worthy of note as a rare occurrence, that the Blacks took all the prizes.

Dorkings, both chickens and adults, left nothing to desire. They brought out some of our best exhibitors, among them Mr. Wakefield, who took four prizes. He was, however, beaten in chickens by the Rev. J. E. Newton. The Revs. J. G. A. Baker, and Martin Amphlett, with Messrs. Dain and Tudman, made the prize-taking difficult.

The Spanish were good.

There was an excellent show of **Cochins**, of every age and colour, but we were sorry to see many of the chickens with vulture hocks. Captain Heaton's Grouse pen is a very good one, the cock a marvellous bird. It is needless to say Mr. Stretch's Bufts were capital, and Mr. Earle may think himself a meritorious exhibitor when he takes precedence of the Rev. G. Gilbert and Messrs. Bishop and Dawson. Mr. Tudman held a good position, as he always does, in Grouse Cochins, but was hard run in chickens by one of our "cosmopolitan" exhibitors, Mr. Wakefield, who was second. The Whites were far above the average, and we were pleased to notice the absence of green legs among chickens, and white ones among adults.

Golden-pencilled **Hamburghs** were lamentably weak. Silvers made amends. A spur was given by the offer of a handsome porcelain vase by Mr. Kerr. Mr. Walsh took first in both classes. Of course, he gained the vase. He was also second for chickens. All the rest were taken by Mr. Marshall. Golden-spangles were strong in adults, weaker in chickens. Silvers reversed—they were strong in chickens, weaker in adults; but there were meritorious birds in all. Mr. Hyde's birds were very good, also Messrs. Fielding's and Beldon's. Mr. Dixon ran them closely. We cannot forbear a remark here. In all **Hamburgh** classes, the white deaf-ear is imperative, but it should be dead white as frosted silver, and the size of a fourpenny-piece—sixpence should be the limit. It may then be understood that the deaf-ear in a **Hamburgh** as large and pendent as the ear-lobe of a Spanish cock must be a defect.

We can speak in unqualified praise of the **Polands**. Gold, Silver, and Black were alike good; but it is not necessary **Poland** fowls should follow human fashions. It is common in the present day for men to part (we believe that is the correct term) their hair down or across the head *de gustibus*, &c., but it is not desirable in a **Poland** hen; a pen of Blacks with white tops was shown wherein the tops of the hens were fairly parted down the middle. The top-knot of a **Polish** hen should resemble a cauliflower, not only in shape but in closeness. It should be as large as possible, but it should be close.

Crève Cœurs were weak in numbers, but not in quality. The honours gained by Messrs. Pigeon and Wakefield would not have been diminished, in all probability, if the competition had been greater.

The Various class gave another proof of the growth of the **Black Hamburgh** class, and also of the estimation in which **Brahma Pootras** are held by the Judges. The first prize went to the latter breed shown by Mr. Fowler, second to Mr. Dixon for **Black Hamburgh**, and third to Mr. Leighton for **Malays**. For **chickens**, Mr. Fowler was again successful, Mrs. Wolferston second with **White Dorking**, and Mr. Dixon third. All these birds deserve separate mention.

The **Game Bantams** were weak, and afforded an easy victory to Mr. T. H. D. Bayley in adults, and to Mr. Turner in chickens. Golden and Silver-laced **Bantams** were very weak—so much so that the first prize was withheld. An otherwise excellent pen was disqualified by a faulty comb in one hen. The shape was perfect, but, save the pike behind, it was pointless. The Blacks and Whites were good.

Mrs. Guy showed a pen of excellent **Turkeys**.

In **Geese** Mrs. Seamons was first, and Mr. Fowler second. Mrs. Seamons' **White Geese** weighed 64 lbs., and Mr. Fowler's **Grey**, 62 lbs.

Mr. Fowler took all the prizes for **Aylesbury Ducks**; the pens weighed 19½ lbs., 19½ lbs., and 18½ lbs. Mr. Fowler gained first for **Rouens**. Mr. T. H. D. Bayley took first with beautiful **Brown Call Ducks**, Mr. Jessop second with **Buenos Ayreans**.

The **Game Cock** entries were better on paper than in the pens. Mr. Clements won easily. Mr. T. H. D. Bayley did the same in **Game Bantams**.

Mr. Holland was indefatigable as Secretary, and we believe the Show was deservedly successful.

GAME (Black-breasted Reds).—First, J. Fletcher, Stoneclough, near Manchester. Second, Capt. Wetherall, Loddington, near Kettering, Northamptonshire. Third, H. Horton, Worcester. Commended, Mrs. Hay, Sudbury, Derby. **Chickens.**—First, A. B. Dyas, Madeley, Salop. Second, H. Bell, Burnley, Lancashire. Commended, Mrs. Hay.

GAME (Brown-breasted Reds).—First, J. Fletcher, Stoneclough, near Manchester. Second, A. B. Dyas, Madeley, Salop. Third, withheld. **Chickens.**—First, J. Fletcher. Second, H. Parker, Wellington, Salop.

GAME (Duckwings and other Greys and Blues).—First, J. B. Chums, Coalbrookdale. Second, J. Fletcher. Third, G. McCann, Malvern. **Chickens.**—First, J. Fletcher. Second, Messrs. Phillips & Winwood, Worcester.

GAME (Any other variety).—First, J. Fletcher. Second, H. Baker, Bridport, Worcester. Third, W. Dawson, Selly Oak, near Birmingham. Commended, J. B. Weeks, Bromyard. **Chickens.**—First and Second, H. Baker, Bridport, Worcester.

DORKINGS (Coloured).—First and Third, C. H. Wakefield, Malvern Wells. Second, Rev. M. Amphlett, Church Lench Rectory, near Evesham. **Chickens.**—First, Rev. J. F. Newton, Kirby-in-Cleveland, Stokesley, Yorkshire. Second and Third, C. H. Wakefield. Commended, Rev. J. G. A. Baker, Old Warden, Biggleswade; Mrs. J. Dain, Lea Brook, Wodnesbury; E. Tudman, Ash Grove, Whitechurch, Salop.

SPANISH.—First, J. B. Rodbard, Aldwick Court, Wrington, near Bristol. Second, J. Smith, Walsall. Third, S. H. Hyde, Taunton Hall, Ashton-under-Lyne. **Chickens.**—First and Second, J. B. Rodbard. Highly Commended, J. K. Fowler, Prebendal Farm, Aylesbury.

COCHIN-CHINA (Cinnamon and Buff).—First, T. Stretch, Ormskirk. Second, H. Bates, Harbourn Heath Cottage, Edgbaston. Third, H. Yardley, Market Hall, Birmingham. **Chickens.**—First, W. F. Earle, Edenhurst, Prescott, Lancashire. Second, C. T. Bishop, Lenton, near Nottingham. Third, W. Dawson, Hopton Mirfield, Yorkshire. Commended, Rev. G. Gilbert; H. Bates.

COCHIN-CHINA (Partridge and Grouse).—First, Capt. H. Heaton, Lower Broughton, Manchester. Second, E. Tudman, Ash Grove, Whitechurch, Salop. Third, T. Stretch, Ormskirk. **Chickens.**—First, E. Tudman. Second, C. H. Wakefield.

COCHIN-CHINA (Any other variety).—First, G. C. Whitwell, Kendal. Second, W. Dawson, Hopton Mirfield, Yorkshire. Highly Commended, R. Chase, Balsall Heath, Birmingham. Commended, J. Bigger, Northampton. **Chickens.**—First, W. Dawson, Hopton Mirfield, Yorkshire. Second, G. Lamb, Red Hill House, Compton, near Wolverhampton. Highly Commended, Mrs. S. B. Herbert, Powick, near Worcester.

HAMBURGERS (Gold-pencilled).—Prize, H. Beldon.

HAMBURGH (Silver-pencilled).—First and Porcelain Vase, T. W. Walsh, Worcester. Second and Third, H. Marshall, Cotgrave, near Nottingham. **Chickens.**—First and Second, T. W. Walsh. Third, H. Marshall.

HAMBURGH (Gold-spangled).—First, S. H. Hyde, Taunton Hall, Ashton-under-Lyne. Second, N. Marlor, Denton, near Manchester. Third, J. Davies, Harborne, near Birmingham. **Chickens.**—First, J. Roe, Arundel Arms, Wadfield, near Manchester. Second, N. Marlor. Highly Commended, J. Dixon, North Park, Clayton, Bradford.

HAMBURGH (Silver-spangled).—First, H. Beldon, Bradford. Second, J. Dixon, Bradford. **Chickens.**—First, J. Fielding, Newchurch, near Manchester. Second, Mrs. H. Sharp, Bradford, Yorkshire. Highly Commended, Mrs. H. Sharp; H. Beldon. Commended, J. Dixon.

POLANDS (Gold or Silver).—First, H. Beldon. Second, G. C. Adkins, Lightwoods, near Birmingham. Highly Commended, J. Dixon. Commended, J. Dixon. **Chickens.**—Prize, G. C. Adkins.

POLANDS (Black with White Crests).—First, T. P. Edwards, Lyndhurst, Hants. Second, J. Dixon.

CRÈVE CŒURS.—First, E. Pigeon, Lymington, near Exeter. Second, C. H. Wakefield. **Chickens.**—Prize, C. H. Wakefield.

ANY DISTINCT VARIETY NOT INCLUDED IN THE ABOVE CLASSES.—First, J. K. Fowler, Prebendal Farm, Aylesbury (**Brahma Pootra**). Second, J. Dixon. Third, J. Leighton, Ash Tree House, Cheltenham (Malay). Highly Commended, J. Hinton, Hinton, near Bath; G. Lingard, Snow Hill, Birmingham (**Black Hamburghs**). **Chickens.**—First, J. K. Fowler (**Brahma Pootra**). Second, Mrs. Wolferston, Statfold Hall, Larnworth (**White Dorking**). Third, J. Dixon. Commended, T. P. Edwards, Lyndhurst, Hants, **White Dorking**.

GAME BANTAMS (Black-breasted and other Reds).—First, T. H. D. Bayley, Ickwell House, near Biggleswade, Beds. Second, Capt. Wetherall, Loddington, near Kettering, Northamptonshire. Third, withheld. **Chickens.**—First, J. H. Turner, Fir View, Sheffield. Second, T. H. D. Bayley.

GAME BANTAMS (Any other colour).—Prize, B. Brotherhood, Almondsbury, near Bristol.

BANTAMS (Gold or Silver-laced).—Second, R. Chase, Balsall Heath, Birmingham.

BANTAMS (Black or White).—First, Capt. Wetherall. Second, G. S. Cruwys, Cruwys Morchard Court, Tiverton, Devon.

TURKEYS.—Prize, Mrs. A. Guy, East Grantham.

GEES.—First, Mrs. M. Seamons, Hartwell, Aylesbury. Second, J. K. Fowler, Prebendal Farm, Aylesbury. Third, G. McCann, Malvern.

DUCKS (Aylesbury).—First and Second, J. K. Fowler. Highly Commended, J. K. Fowler.

DUCKS (Rouen).—First, J. K. Fowler. Second, G. Hanks, Quobwell Farm, Malmesbury, Wilts.

DUCKS (Any other variety).—First, T. H. D. Bayley. Second, J. R. Jessop, Beverley Road, Hull.

SWEETSTAKES.

GAME COCK.—First, G. Clements, Birmingham. Second, J. B. Chune, Coalbrookdale.

GAME BANTAM COCK.—Prize, T. H. D. Bayley, Ickwell House, near Biggleswade.

PIGEONS.—*Pouters* (Any Age or Colour).—First, H. Yardley, Birmingham. Second, F. Elze, Baywater, London. Commended, E. M. Pierce, the Castle, Taunton. *Carriers*.—First and Second, H. Yardley. *Almond Tumblers*.—First, F. Elze. Second, T. D. Walker, Holyake, Cheshire. *Mottled or other Tumblers*.—Prize, H. Yardley. *Balds or Beards*.—Prize, J. W. Edge. *Owls* (Silver or Blue).—Prize, M. E. Jobling, Barras Bridge, Newcastle-upon-Tyne. *Owls* (Any other Colour).—Prize, F. R. Elze. *Barbs* (Any Colour).—First, F. G. Stevens, Axminster, Devonshire. Second, T. D. Walker, Holyake, Cheshire. *Fantails* (White).—Prize, H. Yardley. *Fantails* (Any other Colour).—Prize, J. W. Edge. *Nuns* (Any Colour).—First, F. Elze. Second, J. W. Edge. *Trumpeters*.—Prize, H. Yardley. *Turbits*.—First, F. G. Stevens. Second, H. Yardley. *Jacobins*.—First, H. Yardley. Second, J. W. Edge. *Runts*.—First, E. Pigeon, Lymington, near Exeter. Second, F. G. Stevens. *Antwerps*.—Prize, H. Yardley. *For any New or Deserving Variety*.—Prize, H. Yardley.

Messrs. Hewitt and Baily were the Judges.

BEE-KEEPING IN DEVON.—No. XIX.

FOUL BROOD.

AFTER racking my brain to the uttermost to divine the cause of the unsatisfactory state of my apiary, as described in my last communication, and taxing my ingenuity in vain to discover a remedy, it at length occurred to me that all this mischief might possibly arise from that fatal scourge of continental and American apiaries denominated "foul brood." On referring to bee-books in which this disease is mentioned, I became convinced that my conjecture was correct, and that I had a no less formidable enemy to contend with. This, then, accounted for all my difficulties; and as a disease when known is said to be half cured, I was at any rate relieved from uncertainty, and had the knowledge and experience of others to guide me to a remedy. It may probably appear to many not a little singular that this explanation did not occur to me before, and on looking back it does seem rather surprising that I should not have made the discovery earlier. But it must be borne in mind that I had never before to my knowledge met with a case in any respect similar, and that although I had perused both German and American descriptions of the malady, they had appeared to me to relate to a state of things which was unknown in this country, and had almost entirely faded from my recollection, as referring to matters with which I was never likely to have any concern.

There could, however, be no doubt as to the actual fact. My colonies without a single exception were the victims of this fatal pestilence, and all must speedily perish unless prompt and efficacious remedies were resorted to.

After reading all I could meet with on the subject, in German, American, and English bee-books (for I discovered that the disease was mentioned by Dr. Bevan and other English authors, although under different names), I at length began to comprehend the matter, and understood also at the same time by what means all my stocks had become inoculated by the fatal virus. Knowing how great an assistance it is to bees to be furnished with combs, I have long been in the habit of purchasing in my own neighbourhood, and through friends in various localities at a distance, empty combs from swarms that had perished of starvation; and from the experience which I have recently bought at so great a cost, I now know that some of these had belonged to bees which had really died from foul brood, and by using these combs in various hives I had spread the infection throughout my apiary.

Having, therefore, identified the disease, and traced it to its source, the next step was to apply a remedy; and here, for the better understanding of my after-proceedings, I may state that all authorities agree in stating that this malady does not in the least affect adult bees, but is confined to the brood. The hive in which a diseased colony has been dominated, as also their combs and the honey they contain, are, however, capable of inoculating a healthy stock, and for this reason bees from other colonies robbing a foul-breeding one may convey the infection to their own hives. On this account all my operations were conducted towards evening, when contrary to the usual practice of the criminal popu-

lation of mankind, the marauding spirit among bees is by no means so active as during the forenoon, and in the full glare of a midday sun.

My first experiment was with a couple of pure Italian stocks which I had contrived to keep tolerably strong; and which I therefore deemed equal to furnishing each a moderate artificial swarm, whilst leaving sufficient bees in the parent stock to hatch-out what healthy brood might remain, and possibly also to raise queens therefrom. Providing, therefore, a clean hive furnished with what, at the time, I considered to be pure comb, I first ensconced the queen therein (having temporarily confined her in a small cage to prevent her being lost during the confusion), and taking out the combs one by one, brushed every bee from them into the new domicile. All this was done as expeditiously as possible in order to give the bees little time for filling themselves with polluted honey from their old hive, and in a few minutes they found themselves with their queen in a strange habitation removed to another part of the garden, whilst the deserted hive occupied its old position. There it received such bees as were absent during the operation, as well as a constant accession of numbers during the next few days from bees returning to the old spot, and the hatching-out of such young ones as had escaped the fatal infection; but although many royal cells were formed it failed to raise a queen. The result was also a failure in the case of the swarm in which the disease reappeared as soon as the brood was sufficiently advanced to admit of its development, and which, therefore, necessitated the repetition of the operation in the different and, I believe, more effectual form which will be hereafter described. This unfortunate result may, I think, be attributed to infection lurking in some of the combs with which the swarm was furnished, and which I fancy must have been at some time during this summer in one of my diseased hives, although I was not cognisant of the fact at the time I used them.

My proceedings with the second colony were also precisely similar to the foregoing; but, unlike the first, appear thus far to have been completely successful in conquering the malady, of which no farther symptoms have manifested themselves, but in this case, also, the bees remaining in the old hive failed to raise a queen.

The next move was of a somewhat different character, and involved a trip of a few miles into the country, which I made in the beginning of this month (July), and there I purchased a couple of swarms—a first and second—both good of their kind, one hive being filled with comb tolerably heavy and very populous, whilst the other was two-thirds full and contained a good number of bees. The latter I tied up in a cloth and brought home at once; but, to my great mortification, nearly all the combs fell during the journey, and many were so damaged as to be useless. The remaining combs and bees were transferred to a clean box and supplied with empty combs. Unfortunately, like those before mentioned, they could not have been pure, for the disease subsequently showed itself in two combs; but these having been at once removed it has not again appeared, and the stock now seems perfectly healthy. I may add that since its sojourn in my apiary its black queen has been deposed, and has made an involuntary migration to St. Austell, in the neighbouring county of Cornwall, where I shall be very glad to hear of her well-doing, and that a very beautiful yellow queen from one of my own hives reigns in her stead.

Two days afterwards I took a second excursion, bargained for another prime swarm, and drove the one I first purchased into a box furnished with empty comb. Placing them in their accustomed position, and leaving them to make the best of their poverty-stricken condition, I brought home their original well-furnished habitation, and having consigned it to a warm corner in the kitchen during the night, proceeded the next morning to cut out every comb and fit and fix them into frames. This done, one filled with brood was applied to the assistance of one of the artificial swarms whose formation I have above described, whilst the others were placed in a clean hive, into which was rapidly swept the population of a Ligurian stock whose infected combs were drained of honey and consigned at once to the melting-pot.

The next day I repeated this proceeding with the other prime swarm, installing the bees in a box furnished only with

a few pieces of empty comb, and substituting its beautiful pure combs and healthy brood in a clean hive for the polluted combs of a Ligurian stock.

It is worthy of remark that all the combs of these swarms, although, of course, quite new and clean, were of a bright gold colour. This is invariably the case with combs fabricated in the district a few miles west of me, and must, I imagine, be attributed to some peculiarity in the pasture, since my own bees always make perfectly white combs. Being thoroughly familiar with this fact, I was much amused some time ago by a gentleman in this county, whose bees had evidently perished of starvation, fancying they had been poisoned because their combs were yellow, and forwarding a piece to one of your contemporaries with the view of having it analysed!

I am happy to state that these two last operations appear perfectly successful. The Ligurian queens are now going ahead in their wonted fashion, laying both worker and drone eggs in profusion, whilst the cheerful hum of their indefatigable subjects, again restored to hope and activity, discourses sweet music to the ears of—A DEVONSHIRE BEE-KEEPER.

FAILURES IN BEE-KEEPING.

As a bee-keeper of several years' experience, I have not been inattentive to modern proceedings in regard to these interesting creatures, and especially the so-called scientific methods of management from time to time recorded in your pages. In particular I looked forward with some expectation for such an instructor as "A DEVONSHIRE BEE-KEEPER," at the same time harbouring a shrewd suspicion that Nature was equal to her own work, and that bees wanted no artificial help in swarming, in comb-building, or in any other part of their proceedings. The communication of "A DEVONSHIRE BEE-KEEPER," at page 59, leaves me no cause for regret that I have maintained my faith in the simple, cheap, old-fashioned straw hives, undisturbed with perpetual meddling by amateur honey-makers and queen-improvers. The woeful account your correspondent gives us of the present state of his scientific apiary induces me to turn with satisfaction to my inexpensive row of straw hives, giving me neither trouble in management nor anxiety about the harvest in due season. My little favourites seem to say to their proprietor, "Let us alone, and we can transact our own affairs, weather permitting, and that you cannot alter by any of your new-fangled devices." I turn with confidence to the words of one of our best instructors, Mr. Golding:—"Let my readers repel," says he, "the quackery which would have them believe that it was the kind of hive which commanded the honeyed store: that will depend on the season and the locality." And to the like effect writes Mr. Taylor, in his "Bee-keeper's Manual":—"The most that can be done with permanent advantage is to furnish our intelligent little workmen with a dwelling convenient in its form and management for the intended purposes, bearing in mind, as a general rule, that these are best consulted by attention to simplicity in its details."—AN OLD-FASHIONED BEE-MASTER, *Finchley*.

CLOUDED-BRINDLED MOTH—PIPING—COLOUR OF LIGURIAN QUEENS.

I PICKED the enclosed moth up at the mouth of my observatory-hive, in the evening of the 20th July, and fancy it had been killed in trying to get into the hive. Will you say if it is the wax moth?

The same day I had a second swarm from my observatory-hive. This is a second maiden swarm from a first swarm on the 14th of June, and a hybrid queen, which makes six queens from this first swarm, besides filling the hive and a glass with honeycomb and grub; but on my return home in the evening, and looking into the hive, I found all the bees had gone back, and the largest queen, I enclose, on the alighting-board nearly dead, and this morning the small one was thrown out. Will you say if she is likely to swarm again after this? as last evening I heard piping going on, and therefore, suppose the queen thrown out last evening must have been this queen. Will you say if these queens

are as light-coloured as the true Ligurian queen? as some I had from a Hermann's queen that throws beautiful bees, were dark queens.

In reference to the remarks of the "DEVONSHIRE BEE-KEEPER," in your No. 120, July 14th, regarding the colour of bees, I have a last-year's Ligurian queen, in whose progeny there is hardly a yellow-banded bee, and I therefore conclude that she must have had intercourse with a common drone. I have also some hybrid queens that throw many yellow-banded ones, and some queens that you can hardly see a yellow-banded bee in the whole hive.—B. B.

[The specimen which accompanied your letter is called the clouded-brindled moth (*Xylophasia hepatica*), and is not a wax moth. The scent of the honey was probably what attracted it to the hive's mouth. Piping is a sign that the stock is likely to swarm again. The queens sent appear as light as many true Ligurians; but these latter vary so much in colour that no dependance can be placed upon it. The only test we know is the colour of their worker offspring.]

STUPIFYING BY CHLOROFORM—BEE-SEASON IN IRELAND.

WILL you point out the best manner of using chloroform, so as to stupify bees without killing them, while taking their honey? This being an unusually good year for bees, the information would be valuable to many.

In your Number of the 14th inst. I see that in England it has been a bad season for bees. In Ireland, on the contrary, it has been a singularly good one. For many years I have had no honey; and this week I have already taken a hive containing from 3 to 4 stone of virgin honey, and I have several other hives nearly fit to take.—A CONSTANT SUBSCRIBER.

[The following directions for using chloroform we extract from pages 27 and 28 of the new and enlarged edition of Payne's "Bee-keeping," just published at our office:—

"The necessary dose is a quarter of an ounce, or two teaspoonfuls, poured into a piece of rag doubled twice, and placed on the floor-board of the hive, which must be lifted up for the purpose, the entrance-hole being carefully secured. In about two minutes and a half there will be a loud humming, which lasts about one minute, when all is quiet. Let the hive remain in this state for six or seven minutes longer, making altogether about ten minutes. Remove the hive, and you will find the greater part of the bees lying senseless on the board. There will still be a few clinging between the combs, some of which may be brushed out with a feather. They return to animation in from half an hour to one hour after the operation. The expense is 3d. per hive.

"This plan, unlike the usual mode of brimstoning, and the more modern plan of fumigation by fungus or puff-ball, is easily carried into operation, and the flavour of the honey is not injured by the fumes; but it is said to be highly injurious to the bees."]

WEDDING FLIGHTS OF A YOUNG QUEEN.

ALTHOUGH I have seen it surmised that queens have intercourse with more than one drone, yet I never heard of any one actually having observed that such was actually the case.

On the 10th of July on returning home at about 5 P.M., the queen in my unicomb-hive exhibited evident symptoms of impregnation, and at about seven I actually saw her rid herself of the incubance. On the 11th she again exhibited signs of fecundation, and on the 14th began to lay. From this I should infer that a queen may lay both perfectly pure Italian brood, and also that which will produce half-bred bees; and this may, in a measure, account for the extraordinary difference which exists between individuals in the progeny of some queens. This queen is remarkably well coloured, I think better than any one I have seen yet. The senior princess was so dark that I could not perceive the slightest trace of her Italian origin. My Italian queens have proved amazingly prolific, far beyond anything I have witnessed in our own indigenous species. One of my drones

last year evidently impregnated one of the queens in Lord Dartmouth's apiary at Patshull, as she breeds a good many clearly-marked Italian bees. Patshull is about two miles in a direct line from my house.—J. E. B.

[This observation confirms the correctness of Huber, whose relation of a similar occurrence will be found in page 309 of the edition of 1841. We have long suspected the fact but have never succeeded in witnessing it. We should be glad to know if this queen turns out unusually prolific, even for a Ligurian, as M. Hermann declares such to be the case.]

ITALIAN BEES.

HAVING had more than three years' experience with these bees, I send you some important facts respecting them which have fallen under my observation, and which I believe have not yet been given to the public.

1. The queens are not only more prolific, as previous writers have remarked, than those of the common kind, but are much more disposed to keep their brood compactly in the combs. An Italian colony will often have in two or three combs as large a surface of brood as the black queens will ordinarily have in four or five. The habit of squaring out their work is more particularly noticeable in the early part of the season, and its importance will be readily appreciated by every skillful bee-keeper.

2. The Italian bees, when forage is abundant, are far less disposed to rob than the black bees.

As this fact is not only highly important, but directly contrary to the common opinion, the evidence of it will be given somewhat in detail.

Having purchased, last summer, a number of stocks of black bees in moveable comb-hives, I examined them when the fruit trees were in blossom, in order to learn the condition of each colony. After a few hours spent in this work, the bees would follow in great numbers whenever they saw me approach a hive to open it. I was very much surprised to notice that nearly all the robbers were black bees. I cannot be mistaken as to this fact, as both myself and my son spent some hours, for several days, in examining those hives. Some drone-combs having honey in them were exposed to the bees, so that when emptied they might be used for breeding Italian drones; and these combs were soon covered with black bees, very few Italians alighting upon them, although I had a large number of strong Italian colonies. This year, having only a few black bees, and more than eighty Italian colonies on my premises, nearly all the bees that attempt to rob hives when they are opened, or to light upon combs containing honey, are of the black kind.

I have pointed out these facts to many who have visited my apiary, and the general opinion is, that when forage is abundant, Italian bees are so eager to gather honey from the blossoms, that they have very little inclination to secure it from other sources. It would be difficult to over-estimate the importance of this peculiarity in an apiary where moveable comb-hives are used, and where artificial swarming, and other manipulations which require the hives to be opened, are practised.

It is true that when forage is scarce the Italian bees are as much disposed to rob as the black, if not more so; but the assertion that they cannot be kept near the stocks of black bees without robbing them of their stores is erroneous. Mr. Quimby, who has had excellent opportunities for testing this point, has said enough to convince any unprejudiced bee-keeper that they may be safely kept in close proximity to common bees, and my own experience perfectly agrees with his.

3. The Italian bees will work upon the second crop of red clover.

Three years ago I had twelve swarms of black bees early in June, to three of which I gave, when hiving them, Italian queens. The hives were tolerably well filled with combs by the black bees, but before the young Italians began to gather stores, the honey-harvest was nearly over. In August the state of my health prevented me from making any observations: but a member of my family noticed that while the three colonies with the Italian queens were working

vigorously, the other nine were doing very little. In September I found that the Italians had their winter's supply, while the best of the others had only a few pounds of honey, the season proving one of the worst that I ever knew. The black colonies were broken up, and the bees added to other stocks, while the Italians wintered in good condition. I am now satisfied that the Italians obtained their August stores from the second crop of red clover. Last August I noticed the Italians working vigorously on the red clover, and saw very few black bees upon it. Mr. C. W. Taylor, of Hulmeville, Bucks Co., Pa., who had been so successful in rearing these bees, wrote me last summer that his bees were filling boxes and frames with honey gathered from red clover, while the black bees in his vicinity were doing nothing. Other persons have written to me to the same effect.

In regions where buckwheat is not much cultivated, and where full forage is scarce, this peculiarity of the Italian bees will in some seasons make the difference between a handsome profit and a severe loss in bee-keeping.

While it is true that some foreign writers have asserted that these bees will work upon the red clover, I have not met with any statement that they scarcely notice the first crop, but confine their operations almost wholly to the second crop, or seed clover, which blossoms when the white clover has passed out of bloom, or yields little if any honey.

I will state, as a matter of interest to bee-keepers, that the three Italian colonies before mentioned produced me the second season 350 lbs. of honey, and one large swarm.—(L. L. LANGSTROTH, in *American Country Gentleman*.)

OUR LETTER BOX.

CHICKENS DYING SUDDENLY (*A Subscriber*).—It is always difficult to arrive at the cause of sudden death in chickens, but it is more particularly so when they are only three weeks old. The most natural conclusion, when death follows seizure within a few minutes, is that they pick up something poisonous, which acts immediately. Polish chickens are supposed to be subject to attacks while the top knot is growing. We know of no malady so rapid in its effects provided the chickens when seized are in health. We can only tell you the régime we should adopt to keep them in health. They should be on a dry spot, and the hen should be under a rip; they should have dust at hand to dust and bask in; they should be fed on ground oats as their principal food, and be well supplied with stale bread soaked in strong ale. We do not think you would lose them if you follow this treatment.

MORTALITY AMONG YOUNG POULTRY (*E. B.*).—Both the Turkeys and the chickens are suffering from roup. It is probable your Turkey hens have been allowed their liberty, and have dragged their poult about, as in their wont, till they have been half perished from damp and dew. Let the hen Turkey be confined—an empty china crate is a capital thing for the purpose. Give the poults stimulating food, barley and oatmeal mixed with peppercorns and onion tops; let them have plenty of bread and ale. Let the rip in which the hen is confined be moved every day that there be no collection of dirt. Give the Turkeys Bally's pills. As the pullets are only just attacked they will recover if they are removed from the infected spot, and fed well on bread and ale. In both cases camphor in the water is an excellent thing.

CORNS IN A COCK'S FOOT (*W. C. H. D. A.*).—Sometimes the apparent corn on the foot of a Dorking cock is the result of an injury, or a thorn, or a small gravel stone driven through the skin when the bird flies from the perch. If such be the case the cure is easy, as the cause is plain; but if it is the result of age and the weight of the body it has to carry, it is, we fear, incurable. The progress of the malady may be arrested by keeping the bird as much as possible on the grass, and by having very low perches. If the swelling arises from any foreign body in the foot an opening will, of course, relieve it; but if it does not, it will only make bad worse.

RED CAPS (*W. W.*).—The Red Caps are a breed of fowls peculiar to Lancashire. They are akin to the Golden-spangled Hamburgs, but not subject to the same rules. We do not know them sufficiently to be justified in giving their points, nor can we speak of their laying properties, as we have never kept them.

TRANSFERRING BEES (*C. Major*).—Full instructions for transferring stocks into frame-hives were given in No. 75 of our third volume. The operation may be performed at once. We do not know any professional apianian from whom you could obtain the required assistance.

LONDON MARKETS.—JULY 27.

POULTRY.

The season tells its tale. The supply increases, and the demand falls off. Prices suffer in consequence.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	0	to	3	Guinea Fowl	0	0	to	0
Smaller do.....	3	0	"	2	Liverets	0	0	"	0
Chickens.....	1	6	"	1	Rabbits	1	4	"	1
Geese	5	0	"	6	Wild do.....	0	8	"	0
Ducklings	2	0	"	2	Pigeons	0	8	"	0

WEEKLY CALENDAR.

Day of Week.	Day of Week.	AUGUST 4-10, 1883.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. s.		
4 Tu			78.6	81.1	69.4	16	29 m 4	43 a 7	30 a 9	58 a 10	20	5 51	216
5 W			78.9	81.4	69.6	17	31 4	41 7	57 9	11 0	21	5 46	217
6 Th			72.8	81.9	62.3	16	32 4	39 7	29 10	22 1	22	5 40	218
7 F			74.3	80.6	62.5	12	34 4	37 7	6 11	26 2	23	5 33	219
8 S			74.5	49.7	62.1	15	35 4	36 7	51 11	25 3	24	5 26	220
9 Sun			74.4	50.4	62.4	14	37 4	34 7	morn.	15 4	25	5 18	221
10 M			73.5	52.0	64.2	17	38 4	32 7	43 0	58 4	26	5 10	222

From observations taken near London during the last thirty-six years, the average day temperature of the week is 74.4°, and its night temperature 51.1°. The greatest heat was 93°, on the 10th, 1842; and the lowest cold, 36°, on the 6th, 1833. The greatest fall of rain was 1.06 inch.

AUTUMN PROPAGATION OF BEDDING PLANTS.



THIS is a topic which has so often been elaborately treated of in the pages of this Journal, and one about which it may be considered most difficult to say anything to better purpose than has already been advanced by men of long and large experience. He would be indeed a bold and presumptuous individual who would suppose that by anything like superior force or authority he could set aside all or anything that has been so well and fully said. There cannot be any who believe less than I in a gardening Hercules who would presume to step into the tide of gardening affairs, and attempt to guide all others into the course which he may think best. It may, however, be safely admitted that the authoritative saying that "in the multitude of counsellors there is wisdom," is peculiarly applicable to every department of gardening.

Depend upon it, men of spheres the most circumscribed may be as well able to teach and suggest on some particular topic, as are those who have the direction of operations on the most gigantic scale; and we have each so much to learn in all that is comprehended in that wide and ever-widening word—Gardening, that it ill becomes any to hold forth with tones of imperious dogmatism on whatever subject he may think proper to treat. The diversity of ways and means with which different individuals accomplish results in many respects alike are almost as different, in some parts of their details at least, as are the individuals themselves: hence the never-failing interest that is kept up on the subject of gardening, and the certainty that may be assumed that, however different the doctrines that may be advanced and the method described, they cannot fail to prove of service to a few, at least, of the many who peruse these pages, even if from circumstances over which they may have no control they may not be able to follow out the ideas and practice which are from time to time brought forward.

I therefore cast in my mite into the mighty treasury which has already been formed in the pages of this Journal on the subject of bedding plants, and hope that as the season of propagation is close at hand, some tyro may benefit by what shall be briefly advanced.

If we could but fully understand the means by which the most important results are accomplished in the great laboratory of Nature, it would invariably be found that the means are in themselves simple, although, like all else in the abstract, marvellous. And so I think it is found to be in gardening: the simpler the means, in

most cases the greater and more satisfactory the results. For a good many years I have made it a point for attainment to produce a given quantity of flower-garden plants by the simplest possible means consistent with the production of a first-rate article. I do not mean by this the many resorts and makeshifts which might be called into operation, and which, after a good deal of experience in that sort of thing, I have come to regard as most unsatisfactory and the most expensive by far in the end. Here as in everything else, depend upon it, what is worth doing at all is worth doing well; and in flower-gardening as attempted in numerous instances at the present time, it would be a wise and satisfactory procedure if the area of flower gardens were much reduced and the remainder better executed. This would be a great step towards rendering flower-gardening what it might be—one of the most delightful departments of a gardener's duties, instead of that which heaps upon him an untold amount of drudgery. It would, moreover, cover the present style of flower-gardening from the many objections which some raise against it. That the season of full beauty could be nearly doubled in duration by means of differently managing the plants now in use is a fact which has been fully proved; and this, too, without more labour—by simply reducing the area to be planted, and which is perfectly consistent with an enhanced degree of pleasure and enjoyment; for it is a fact beyond all dispute that a few beds may be made far more exquisite and effective than ten times their number as we sometimes meet with them.

And this is only one of the many advantages that would be gained by a different mode of procedure. It would relieve hothouses which have been erected expressly for other purposes from being turned into Pandora's boxes. After having had a long spell at turning out thousands of plants from forcing-houses and hardening them off by almost every means that could be devised; and on the other hand, after the experience of a better-ordered state of affairs, the fact has forced itself upon me most convincingly, that the makeshift system is by far the most expensive, fifty per cent. more laborious, and equally more unsatisfactory in results, than when erections are afforded for the purpose. In this, as in everything else, there is a vast amount of unfruitful mental and bodily wear and tear, mishaps, and disappointments, and to a great extent abortive results, when that which is aimed at is altogether out of proportion to the means at command. And in flower-gardening, as now practised, gardeners themselves have plunged headlong without adequate means into an amount of labour, from which in many cases they would be glad to retreat; and after all, the splendour of the parterre is only of two or three months' duration, while it might be extended to nearly double that period, if the means and extent were more in character and proportion. If ever flower-gardening is to be raised many steps above its present level some course of this sort must be insisted on, as well as some alteration of the general principles now observed both in the character and arrangement of the plants.

In the autumn propagation of all flower-garden plants, excepting Geraniums and Calceolarias, the object is simply to prepare enough of stock from which to propagate in early spring sufficient numbers to meet the requirements of the place. Spring-struck plants, as is well known, are much to be preferred to those struck in autumn and winter; and the labour connected with such numbers is confined in the one case to weeks, while in the other it is spread over months.

Looking at cuttings, let us say of Verbenas, Heliotropes, Alyssum, &c., before they are taken from the parent plants, there we find them in all the health and vigour attainable in a rich soil and under the influence of full sun and air. The end to be attained is not simply how to get these rooted and established as independent plants: this could be effected in many ways. But the question is how to effect it in the easiest, soonest, and most convenient way, and with the least possible amount of debility entailed on the plants in the process; and after they are thus rooted, how best to treat and dispose of them so that they can be wintered in the greatest health and robustness possible.

After having tried a good many methods of preparing a stock that is at the same time healthy and numerous enough to enable short work to be made of the spring propagation, I have found something like the following order of things to be the most satisfactory of any course that I have yet tried, although others may arrive at precisely the same end by different routes.

Early in August about a foot of last autumn's tree leaves are put into the bottom of a cold frame, and beat firmly down. Over the leaves is put about 3 inches of soil, consisting of equal parts of loam, leaf mould, and sand well mixed together. This is beaten firmly down with the back of a spade, or any similar appliance, and in this state the frame is in readiness for the cuttings; the required number of the different kinds is selected from the margin of the beds, or from wherever they can be most readily had. There is not much ceremony about the selection and preparation of Verbena cuttings, only that they are short, stubby, fresh cuttings that have not yielded blooms, and that the leaves are removed from the bottom joint to prevent damping. They are made, dibbed into the frame, and watered with as little delay as possible, so that they are not allowed to droop and get injured by being dried up. When the necessary number is in they receive water through a very fine rose sufficient to moisten the 3 inches of soil. The frame is closely shut down, and rather thickly shaded during sunshine. In fact, everything is done to keep them as cool as possible. If the evenings are calm the lights may be entirely drawn off for a few hours, and when put on for the night air is left on. In the morning, if the day is likely to be hot, they are dewed over through a very fine rose or syringe. Under such treatment they root with little trouble and without making much growth at the top—at least, as compared with similar cuttings struck later in the season in warmer quarters. The object is to get roots formed with as little heat and stagnant atmosphere about the cuttings as possible, and so prevent their being drawn and weakly.

When they have made roots about an inch long they are pricked-off into round earthenware pans, 14 inches in diameter and 7 inches deep. The pans are prepared by placing a thin layer of rather finely-broken crocks over the bottom, then a layer of old mushroom-bed dung, which consists chiefly of horse-droppings, and they are filled up with a good substantial compost consisting of equal parts of a rather sandy loam and the same sort of dung already named, with a very slight addition of sand. About thirty plants of such as Verbenas and Alyssum are put into each pan, and as soon as possible after being pricked-off they are fully exposed to all weathers except heavy rains. By housing time you might shear armfuls of fine healthy cuttings from them. They are, of course, repeatedly stopped, and kept free from bloom-buds as they grow, and carefully attended to with water. We make up about eighty or a hundred pans of Verbenas in this way; and they are wintered in any cool, dry, place, and kept moderately moist at the root; and even with such varieties as Purple King, which is largely grown, mildew rarely makes its appearance.

In spring almost any amount of cuttings can be had from well-stocked cold frames struck about twenty thousand

Verbenas alone in a very short time, and three times the quantity could have been struck if needed. As compared with plants that I have formerly adopted, and which used to be in vogue, this is found to be attended with far less labour and much better results.

In the case of Geraniums the middle of August is considered a good time to make a commencement (except in the case of Golden Chain, which is always surest if in a fortnight earlier); and if all can be put in by the middle of September it is a great deal better than later attempts. After trying a good many ways in striking all the different varieties of variegated Geraniums I prefer striking them and wintering them in eight-inch pots. They are not very heavily but carefully crocked. Over the crocks is placed a layer of mushroom-dung; and the pot is filled to within 3 inches of the brim with one part loam and one part leaf mould, and is then filled up with the same soil after mixing another part of coarse pit sand with it. The number of cuttings put into each pot varies from eighteen to twenty-four according to the size of the sorts. Large cuttings are preferred as those which root soonest, are least likely to damp-off, and make the finest plants in spring. These are dibbed into the pots immediately they are made, watered, and placed in a position where the pots will stand on a dry bottom, and be fully exposed to the sun all day long, with no covering at any time, unless it be to throw off heavy and continued rains. Most of the larger leaves are removed in making the cuttings, but in no case are they dried before being put into the cutting-pots, never being able to discover what was gained by such drying except mischief. In hot days, when water may not be needed in the soil, the cuttings are slightly dewed over in the evening when the sun has left them.

I have found that cuttings struck and wintered in pots of the size recommended keep much better, and are more conveniently managed, than when put into either smaller or larger sizes or into boxes. The advantage over boxes I conceive to be derived from the better drainage secured, and the more free play of air and light among the plants when in smaller and round detachments. The earthenware has also a little to do in the matter. The whole winter they are kept very dry, and in spring when shaken out of the soil there is a great amount of irritability about the whole plant, and their bunches of white roots are almost ready to take up the very sand itself.

The common scarlet varieties are struck and managed in the same way, except that the great bulk of them have been put into boxes to economise space. But from the conviction that they do so much better in pots fewer of them will be put into boxes in future, but will be managed the same as detailed in the case of the variegated sorts. There are usually struck more than 15,000 plants, and a little calculation will show that at the rate of eighteen to twenty in an eight-inch pot it will not require such a vast space to winter them in.

I will not at present enter into the many methods which might be adopted under various circumstances, but have simply given what—after having tried various ways—I have found to be the most sure and satisfactory mode where such means as are necessary are at command. D. THOMSON.

ALEXANDRA PARK FLOWER SHOW.

FLORISTS' FLOWERS.

In commenting generally on the features of this most excellent Show I adverted amongst other things to the Roses, and to Mr. Keynes' especially. Nowhere this season have I seen such flowers, nor indeed do I ever recollect seeing such a box as his of 100 blooms was. I thought on looking at them that they must have been grown on the Manetti and were maiden blooms, a condition in which I know marvellous blooms are sometimes produced; but on saying so to him I was assured it was not so—that they were all from standards, the more credit then is due to him. The water-pot must, I think, have been well used during this dry season to have produced such flowers. Where all were good it seems needless to particularise; but I may say that the following were superb:—Duc de Rohan, and Maurice Bernhardt. These flowers are, I am per-

suaded, not so extensively known as they ought to be. When I saw them at Messrs. Frasers' last year I noted them as amongst the best of the then new ones, and the magnificence of these two blooms fully justified my preference. Then there were Gloire de Vitry; Madame Boutin; Jean Bart; Paire de Terre Noire, with more stuff in it than ever I have seen; Louise de Savoie (Tea), very beautiful; Louis XIV.; Charles Lefebvre, grand; Céline Forestier; Duchesse d'Orleans; Gloire de Santenay, equal to Sénateur Vaisse; Madame Clemence Joigneux, I do not regard this flower as like John Hopper—it is more open, not so compact; Madame Julie Daran; La Brillante; Alphonse Damasin, very fine; Mathurin Regnier; Pourpre d'Orleans; Général Castellane; Gloire de Bordeaux (Tea), this Rose has this year come very dark and disappointed growers—I fear it was too much of a Gascon, but sometimes I have seen it very beautiful; Prince Léon; Duc de Cazes; Robert Fortune, very curious; Souvenir de Comte Cavour, most beautiful; Catherine Guillot; Olivier Delhomme, beautiful; L'Eblouissante; Virginal, a lovely bloom, equalling Mademoiselle Bonnaire in her best days; Triomphe de l'Exposition; Monsieur Joigneux; Vicomte Vigier; Devonienais; Sénateur Vaisse, a splendid bloom; Lord Raglan; Evêque de Nîmes, as only Mr. Keynes can grow it; François Première; Mademoiselle Eugénie Verdier; Madame Furtado, fine, pity 'tis she is so delicate; Madame Charles Wood, very fine; François Lacharme; Reynolds Hole; Professor Koch, beautiful shape; and Madame Charles Crapelet. In Messrs. Paul & Sons' were Lord Clyde, very fine; Madame Charles Wood; Lord Raglan, a beautiful scarlet; Madame Boutin; Evêque de Nîmes; Triomphe de Caen; Cardinal Patrizzi; Gloire de Santenay; Christian Puttner, very good; La Boule d'Or, very fine; La Reine; Madame William Paul; Madame Charles Crapelet; and Sénateur Vaisse. Mr. W. Paul had in his collection, which obtained the third prize, Beauty of Waltham; Eugène Appert; Louise Magnan; Souvenir d'Elise (Tea), very fine; Bougère (Tea); Sénateur Vaisse; and Emile Dulac.

In the Class for 50, three trusses of each, Mr. Keynes was again first. The most noticeable of his blooms were Olivier Delhomme, Vicomte Vigier, Paire de Terre Noire, Céline Forestier, Virginal, Triomphe de Rennes, Clement Marot, L'Eblouissante, Sénateur Vaisse, Gloire de Bordeaux, Charles Lefebvre, Mademoiselle Eugénie Verdier, Beauty of Waltham, Madame Charles Wood, and Gloire de Santenay. In Messrs. Paul & Sons' collection, which obtained second prize, there were fine blooms of Beauty of Waltham, Eugène Appert, Lord Clyde (which promises to be a most useful flower), Prince Léon, Baronne de Noirmont, Pauline Lanzeleur, Louis XIV., Souvenir de Leveson Gower, Comtesse Cécile de Chabillant, and Madame Furtado. Mr. Francis was third, and had fine blooms of Duc de Cazes, Anna de Diesbach, Général Jacqueminot, Madame Vidot, Souvenir de Leveson Gower, Lord Raglan, Duchesse d'Orleans, Triomphe de Rennes, and Prince Camille de Rohan, which promises to be one of the best dark Roses we have.

As I have already intimated, Amateurs did not come out in very full force; Mr. Corp, of Milford, being first in both classes, and Mr. J. C. Perry, of Birmingham, second. Amongst the flowers of the former gentleman I noticed Sénateur Vaisse, Général Jacqueminot, Acidalie, and Souvenir de Comte Cavour; and amongst Mr. Perry's, Comtesse de Chabillant, Sénateur Vaisse, Général Jacqueminot, and Gloire de Dijon; but in truth, after looking at the splendid flowers in the Nurserymen's Class, one's eye became dissatisfied with, no demerit to them, the inferior blooms of the Amateurs.

Mr. Charles Turner exhibited some fine Pelargoniums, taking into account especially the time at which they were exhibited. They were compact plants and of newer kinds than we see ordinarily at the earlier shows, comprising Murillo, Regina Formosa, Rosine Margottin, Lord Clyde, Tycoon, Lord Palmerston, and Conflagration. He had, also, two splendid stands of Carnations and Picotees, which justly excited the admiration of all the visitors, who might well wonder that no better encouragement has been given to such lovely flowers. Amongst Picotees I noticed especially a seedling purple, Flower of the Day, Maid of Clifton, Col. Clark, Northern Star, and Garibaldi; while amongst Carnations, Samuel Moreton, Duke of Wellington, Seedling 1282, Rosa's Garland, Florence Nightingale, Fanny Gardener,

Squire Meynell, Confederate, Splendour, and W. Chapman were conspicuously fine, although I may say that it was a matter of extreme difficulty to select where all were excellent. In Hollyhocks, Messrs. Downie, Laird, & Laing, of Stanstead Park, sent some magnificent blooms. Amongst them were fine blooms of George Keith, Stanstead Rival, Excelsior, In Memoriam, Lady Dacres, Purple Prince, Walden Masterpiece, Mrs. F. Mackenzie, and Sambo.

Messrs. Paul & Son had another collection, the best of which were Morning Star, Illuminator, and General Havelock.

There were also some fine stands of Verbenas, Mr. Perry, of Birmingham, taking first prize with a fine collection, amongst which were Nemesis, Géant des Batailles, Magnificus, Foxhunter, and some promising seedlings.

Dahlias, too, were exhibited by Mr. Charles Turner; and some stands of Pansies, although the season of the year was too far advanced for them, by Downie & Co. and other growers; but no one, I think, could fail to see how much of attraction had been added to the Exhibition by the many fine stands of florists' flowers, and the miscellaneous objects sent in. I have already alluded to Mr. Cutbush's table decorations. Messrs. A. Henderson's hanging-baskets were also excellent. Mr. Williams, of Holloway, too, had some very pretty stands, arranged with Caladiums and other plants beneath them growing in cocoa-nut fibre, and I have been surprised to see how well they thrive, and for how long a time too in such situations. Altogether there was enough to satisfy all comers; and if the future of the Alexandra Park Company is to be measured by its opening, it has a long career of success before it. It is but fair to add, that notwithstanding the unlooked-for pressure laid upon him, Mr. Mackenzie was enabled to evolve order out of the chaos, so that when the Show opened no one would have believed what it had been so short a time previously, and he, moreover, managed to do it all with extreme kindness and courtesy to all concerned.—D., Deal.

BOILERS.

(Concluded from page 62.)

By the points advocated in my last communication I will test a few of the boilers now in use.

SADDLE BOILER.—It exposes a large surface to the direct, but an inconsiderable amount to the indirect, action of the fire; holds a large body of water; is not liable to get out of order, nor to be soon worn out; being wider at top than bottom, the circulation is sluggish; and even the flues require frequent cleaning out, or it heats more slowly than usual. It cannot be repaired, but it seldom needs repair; it heats slowly; is the easiest managed of all boilers; burns coal well, and when the draught is good, coke also; requires frequent attention; is difficult to regulate, and for the most part incapable of being cleaned out, but that, of course, could soon be rectified. A saddle boiler costing £20 exposes about 25 feet of surface to the direct action of the fire, and about the same quantity indirectly. Now this surface measured by an engineer's standard—a foot of exposed surface will heat to 212° 25 gallons of water—shows the heating powers to be 50 x 25 = 1250 gallons, or, with the water in boiler, 500 feet of four-inch pipe; but the boiler in practice will heat more than the calculated amount of piping. I would not adopt such a mode of calculating, for much depends on the heat of the fire and the material giving the heat. Coke when burning is nearly as hot again as slack coal undergoing the same changes. I consider 20 feet of surface directly exposed will heat more water than 100 feet of surface indirectly exposed to the action of the fire, or, in other words, 1 foot of direct surface to heat 50 gallons of water, and 1 foot of indirect to heat 10 gallons only, and if we adopt that mode of calculation a ready estimate is afforded of the heating powers of a boiler.

In my opinion the fire ought to heat the lowest part of a boiler first; but if the fire strikes or heats the lowest parts, and the return-pipe comes perpendicularly (except a short bend), into the boiler, the heated water may rise up it instead of passing through the boiler to the flow-pipe, and should that take place the water cannot flow freely. In a saddle boiler this is prevented, for the greatest heat is at the upper part of the saddle, so that if the water becomes

heated at all it must pass into the pipes soon, or before the water in the boiler attains any great heat.

Saddle boilers consume as much fuel as most, and heat a comparatively small amount of piping; and the chief merit they have appears to be that they will stand any amount of abuse, and are not often out of order. There are boilers that will do double the work of a saddle boiler with the same quantity of fuel, and the various modifications of a saddle boiler are as ineffective as the original. To notice all of them would take up more space than the boilers themselves, and that is not little, and yet yield no practical matter.

Of HORIZONTAL BOILERS, Thomson's retort is one of the best; Monro's cannon being a modification of the retort principle. The former is not so complicated as the latter, therefore not so liable to get out of order. The retort exposes double the surface that a saddle boiler does to the action of the fire, holds little water, heats quickly, consumes any kind of fuel, and requires but little attention. The cannon boiler is equally good, only being more complicated it is more liable to get out of repair; but then its complication is an advantage, for it is much more economical to replace a part than the whole of a boiler. A leaky joint is soon stopped, but who can stop up a crack in a clumsy monstrosity cast in one piece? I consider complication so far an advantage rather than a drawback.

With a boiler of many parts there may be defects. I admit there are, for it not unfrequently happens that one part is not in unison with its neighbouring parts—a flaw or a defect is there or results; but how much easier is it to put in a new part than remove the whole.

Another merit of a horizontal boiler is that it takes less room to set, and can be used in many places where an upright boiler could not be fixed; yet, what with the soot or dust, the heating powers are considerably reduced and the draught is usually sluggish.

I will not criticise all boilers, for some of them have nothing to recommend them, and I have no doubt that any serviceable old boiler excelled its contemporaries at some time. A good thing to-day may be a very poor affair to-morrow, and a good boiler now may be a very bad one in the next generation.

UPRIGHT TUBULAR BOILERS owe their origin to Mr. J. Weeks. I cannot see any great difference between the upright boilers of the various makers, and I would just as soon have one as another. Ormson's is a deviation from that of Weeks, and is said to expose no joint to the direct action of the fire. There may be merit in that; but experience tells me that a joint will not leak an hour sooner by being exposed to the action of the fire than when not exposed.

One principle prevails in all tubular boilers, and the only difference I can see in them is more technical than important. Weeks' improved tubular boiler is as good as any, though I am a little partial to Clarke's upright with the water-jacket at the bottom, which I consider a move in the right direction. Boiler furnaces heat too much brickwork; but if the water-jacket were made to enclose or confine the fire the entire length of the boiler, only allowing a flue-hole at the top, or two flue-holes if the boiler were large, and then bringing the flue round the water-jacket on the outside, I think very little heat indeed would be lost; but, as it is, fully one-half the heat is lost in the brickwork and in the chimney.

Everybody is acquainted with a tubular boiler, therefore I need not describe one; but I will treat of Weeks' improved as being the one with which I am practically most acquainted. Having the size No. 4, costing £20, in use, I have experience of its working.

Weeks' improved boiler has one four-inch flow and two four-inch return pipes, or apertures for pipes. The return-pipes do not pass through any hot brickwork, therefore the water comes into the grate-bars, which are hollow, and placed, of course, horizontally. At each end of the grate-bars is a box-like pipe to which the pipes of the grate are connected, and at the end opposite the furnace-door, where the return-pipes enter the boiler, is a six-inch aperture through which the heated water from the grate-bars passes into the upper part of the boiler, where there are two circular ring-like pipes of a hexagon shape against which the heat of the

fire is mainly directed. Into these circular pipes round pipes are fixed, and connected at top with a circular basin, at the upper side of which the flow-pipe is situated. The boiler proper is 3 feet 6 inches high, and with the grate-bars about 5 feet high. It is about 3 feet wide at bottom, and tapers to about 2 feet at top. The grate-bars with the end-junctions are 3 feet 6 inches long, and they are placed so that the side pipes are 6 inches higher than the centre pipes or grate-bars.

There is not a part about this boiler on which the fire does not play, and, as a necessary consequence, the full heating power of the fire is employed in heating the water it contains. Owing to the parts being narrow and circular, the surface exposed is large; for, unlike a saddle boiler on which the fire can only act on one side at once, in a tubular one all the surface is simultaneously exposed. Thus a £20 saddle has only some 25 feet of directly exposed surface, and the same of indirect; but Weeks' improved £20 tubular boiler has, when in full going order, over 100 feet of directly exposed surface, and no indirect of any moment; but at times, when the grate-bars are covered with ash, and the feeding cavity full, a certain amount of indirect surface presents itself. On the other hand, we do not allow anything for the under side of the grate-bars, though boiler-makers generally include them in their calculation. I consider that a tubular boiler having 160 feet of exposed surface will have at all times on an average—making allowance for the accumulation of ash on the grate and the coke in the feeding cavity—70 feet of direct and 30 feet of indirect surface exposed to the action of the fire, and this gives $70 \times 50 = 3500$ gallons of boiling water, to which we add the 30 feet of indirect surface $30 \times 10 = 300 + 3500 = 3800$ gallons of water as the heating capabilities of the boiler. But this is more by 50 gallons than Messrs. Weeks calculate their boiler to heat. Well, but one of my neighbours has a No. 3 boiler of Weeks' heating 800 feet of four-inch pipe, whereas it is only calculated to heat 600 feet. The boiler, however, in severe weather has to be pushed, and tubulars never ought to be overworked. Mine, on the other hand, has only some 1200 feet of piping attached to it, one-third of which is $1\frac{1}{2}$ -inch, and this enables me to fire easily and the boiler to play with its work.

In the severest weather I can have boiling water in the pipes in an hour after lighting the fire; and now I can run water round a vinery or any house in ten minutes by merely turning a valve, whereas had I nothing but a saddle boiler the fire would be to stoker or light, and if boiling water were had in a couple of hours I should think myself well off. All I have to do is to clean the boiler in the morning, or rather the furnace, and feed it. This takes up about half an hour, for I like to leave all about a boiler as tidy as a well-swept parlour, and not have ashes in a corner of the fire-hole, and coke thrown about everywhere. The draught is left open until the houses are attended to, or say half an hour, and then closed entirely, and no one can find the flue more than warm after that; but the fire burns, keeps the pipes hot until six o'clock in the evening, when the fire is made up for the night, occupying about ten minutes, and I rarely see it again until morning in mild weather. But in severe weather, when I have all the houses going, I give about half an inch of draught in the morning until 1 P.M., when the fire is raked, more coke added if necessary, and the draught reduced to nothing. At 6 P.M. the furnace is again raked, refilled with coke, the draught-door opened about a quarter of an inch if the night is likely to be severe, or shut if likely to be mild. The boiler wants no further attendance until morning unless a sharp frost occurs, when a little more draught is given before going to bed, and then we can sleep with a conviction on our minds that our charge is as comfortable as ourselves. Compare a saddle boiler to a tubular, and deal practically with both, and we shall find a vast disparity between them. One does as much more work as the other with the same quantity of fuel, and in other words saves the proprietor's pocket, and contributes largely to the gardener's ease of mind and body. I hold that anything and everything in a garden is or ought to be fixed on that principle; and I consider that if a gardener can save his master's pocket by an increased outlay, that it is better than letting money lie dormant. Although a tubular boiler conforms to every

point but one, it has as regards that one—viz., point 9th, a serious defect—it only burns coke well.

In respect to a boiler on a new principle, I have a notion that a series of circular tubes would be better than upright tubes. Presuming the lower circle of pipe to be 3 feet in diameter, the next would be 2 feet 9 inches, and connected to the other or lower pipe by four joints of the same diameter as the pipes. These circular and short uprights being six-inch, and an inch between would give a number of coils, and these coils would gradually be reduced in diameter so as to be 1 foot 6 inches at the top of the boiler. Around the whole I would have a water-jacket, and so formed as to suit the pipes; for the fire, after striking the circular pipe, would branch out in two directions—one towards the jacket, and there I would have a concave cavity to receive it, and so arrest its hurried passage upwards, and this being continued the length of the boiler would well nigh exhaust the heat of the fire.

I would have the firegrate-bars hollow, and connected to a circular six-inch pipe, into which the return-pipes would enter from two opposite points, on which the water-jacket would not only rest but be connected. The hot water from the jacket and that from the boiler would meet together at the top of the boiler in a circular basin, but flat at the bottom and top, and with a four-inch aperture in the upper surface for the flow-pipe. In a large boiler of such a form there would be a series of coils, and the fire would strike against the boiler from the bottom to the top, and that alone would double the rapidly heating power. Such a boiler would hold a large quantity of fuel under it, the whole or part of which fuel could be made to act by increasing or diminishing the draught. Lastly, it would present a larger extent of surface to the action of the fire than any boiler at present made, and certainly would take less fuel to heat it.

I have now only to add that every boiler should be under command like a horse; and I cannot refrain from saying that dampers are not the sort of contrivances for regulating a boiler. The regulator ought to be the ashpit door, and by opening or shutting it the draught should be increased or decreased at pleasure.—G. A.

VINES BREAKING AGAIN SOON AFTER BEARING A FORCED CROP.

FROM my early Vines I cut the Grapes at the end of April and close of May. The Vines were turned out and pruned early in June, and tied to stakes in front of the house. I thought they were at rest, but on examining them to-day (July 23rd) I see the buds are very plump, and swelling very fast. They seem to me as if they were asking to be taken again into the house. It now has succession Pines in it. The Vines were taken into the house on the 13th of November last year, to start them, and that was a month earlier than before. I should like to take them in now if you think I should be doing right. They are Black Hamburghs and Sweetwaters.—A YOUNG GARDENER.

[We think you pruned your Vines too early, and if exposed to heat and moisture the roots would cause the buds to swell. In such a case, as there is no likelihood of frost to injure them, we would let the Vines remain outside until the buds were broken, and their shoots were from 1 to 2 inches in length. They will break more regularly than if placed in the house, and then they will be early enough to enable you to have the Vines in bloom in bright weather.]

LANDSCAPE-GARDENING IN IRELAND.—In our last we announced the death of Mr. Fraser, so many years the leading landscape-gardener of Dublin; and it is with pleasure that we see his place is about to be occupied by a gentleman so eminently worthy to follow in his footsteps. By an announcement which appears in our advertising columns this day, we observe that Mr. Chapman, of Richmond, in Surrey, has determined upon opening an office in Dublin, and devoting himself to the interests of landscape-gardening in Ireland. From our own knowledge of Mr. Chapman and of his antecedents we augur for him a successful career. A pupil of Sir Joseph Paxton's, and for several

years an assistant to Mr. Kemp, he has so imbibed the ideas and principles of these masters as to leave no doubt but that if he is spared, and he receive that patronage that is his due, Ireland will not regret that he has chosen to number himself as one of her adopted sons.

SOME OF THE GARDENS WORTH VISITING IN YORKSHIRE.

I AM sure the list you purpose giving of the chief gardens in Great Britain will be a great boon to the tourist as well as the gardening community, and according to request I send you a list of a few places in Yorkshire that are well worth a visit; also, the nearest town or railway station.

Place.	Proprietor.	Gardener.	Town or Railway Station.
Castle Howard...	Earl of Carlisle	Mr. Sutherland	Castle Howard Sta.
Harewood House	Earl of Harewood	Mr. Fowler	Leeds. Arthington Station.
Studley Royal ...	Earl de Grey & Ripon...	Mr. Clarke	Ripon Station.
Upleatham Hall.	Earl of Zetland	Mr. Grey	Kedcar. Marake Station.
Bishopthorpe ...	Archbishop of York....	Mr. Oulston ...	York.
Duncombe Park.	Lord Feversham.....	Mr. Gower	Holmsley. Gilling Station.
Feirick Hall.....	Lord Wenlock	Mr. Mitchell... York.	
Grimsby Park...	Lord Londesborough...	Mr. Richards ..	Tadcaster. Stutton Station.
Everingham Park	Lord Helmsley.....	Mr. Links	Market Weighton.
Allerton Park ...	Lord Stourton	Mr. Saul	York. Allerton Sta.
Baldersby Park.	Lady Downes	Mr. Mallorie... Thirsk.	Baldersby Station.
Kilnwick Percy.	Hon. Adml. Duncombe	Mr. Campbell ..	Pocklington.
Sutton Hall	"	Mr. Campbell ..	York. Tollerton Station.
Benningborough Hall.....	Hon. Payan Dawne	Mr. Foster	York. Skipton Sta.
Ripley Castle ...	Sir Wm. Ingleby.....	Mr. Fowler ...	Ripley.
Temple Newsam	Meynell Ingram, Esq....	Mr. Taylor	Leeds.
Thirsk Hall	F. Bell, Esq.....	Mr. Davidson ..	Thirsk.
Heulington Hall	J. G. Yarborough, Esq.	Mr. Davidson ..	York.

Should you at any time publish the above list separately, I shall be happy to be a subscriber to the work.

I hope the Gardener's Benefit Society, which has been so ably advocated in your paper, will soon be established. I shall be happy to send you half a dozen gardeners' names, as members, as soon as the conditions or rules are published.—C. S. G.

BERBERRIES AND THEIR CULTURE.

THE genus Berberry yields to no other shrub in beauty, whether we regard the foliage, habit, or flowering properties. The foliage is peculiar in shape, of a bright glossy green; the habit is compact, and the flowers produced in profusion, of a beautiful yellow colour, and are followed by berries which make the plants handsome for a long period.

The common Berberry (*Berberis vulgaris*), is a native of this country, and is found in hedgerows and on wooded hills, where its fruit has refreshed many a rustic's palate. The flowers are produced in yellow racemes in April and May, are offensive to the smell if closely approached, but at a short distance their fragrance is very grateful. There is something very singular about fertilisation in a Berberry flower. The stamens are bent back to each petal, the concave tips of the petals sheltering the anthers. Watch a bee come and dart its proboscis into the flower, sipping the nectar from the bottom of the cup where the filaments join the ovary; and immediately any filament is touched near the ovary, the stamen springs from the petal and shakes the pollen on the stigma. A pin or hair similarly brought into contact with the lower part of the filaments next the ovary produces the same result, but no shaking of the branch, nor any pinching or touching of any part of the flowers exteriorly, has any effect on this irritable flower. The fruit, about the size of a pea, succeeds the flowers, and when ripe makes an excellent preserve if one quart of fruit be boiled along with 1 lb. of loaf sugar. In its raw state the fruit is cooling and agreeably acid, and its juice is used for flavouring sweets, and in a dry state for making sugar plums. The bark of the tree is used by many old women, even at this day, as a cure for jaundice and affections of the liver.

Berberis vulgaris and its several varieties—viz., *violacea*, *alba*, *nigra*, *asperma*, *lutea*, and *purpurea*, all named after the colour of their fruit, thrive in almost all soils and

situations; but deep, rich, sandy loam suits them best, and an open sunny site or aspect is necessary to secure fruit. In woods, however, where the shrubs receive a moderate amount of light without much sun, I have seen them plentifully producing fruit which seems to be well relished by some of the feathered tribe. As we begrudge a few Cherries and Strawberries for the songsters' invaluable nine-months picking of grubs out of our gardens, is it asking too much to request that a few Berberry shrubs be planted in the woods? They are an excellent cover for game. Nevertheless, their fruit grown in shade is never so highly flavoured as when exposed to sun heat, light, and air: therefore, I by no means recommend planting Berberries in woods in hopes of obtaining their berries to increase the novelty of the dessert, and fill the preserve-jars in the store-room. Still the fragrance of the flowers imparts a charm to the woodlands in spring, and may help to keep the songsters from the netted Cherries.

As a hedge plant the Berberry has a few points to recommend it. It will bear any amount of cutting, grows rapidly and close, and is rather rough to face, its short prickles or spines not being pleasant. It is not so good, however, as a Quickset (Thorn) hedge, and at the very best is but a second-rate hedge plant. Yet, whatever good properties it might have, I fear ignorance and prejudice are still too prevalent to acknowledge as erroneous the popular idea that it communicates the mildew fungus to the Wheat plant. Not long ago a certain M.D. drew my attention to a field of Wheat infested with a parasitical fungus, and in walking round the garden a few days afterwards he noticed a fungus on a Berberry apparently identical with one on the Wheat plant in the field adjoining. He was a good fungologist, therefore I was mute; but he told such an old-wife tale about the Berberry communicating blight to Wheat in close proximity to it, even insinuating that it had the power to cause Wheat to be affected by the Berberry blight at a distance of 200 yards, that I very soon doubted his words, for I had seen abundance of blighted Berberry shrubs in a plantation adjoining a Wheat field which did not prevent the Wheat plant yielding sixty bushels per acre. We had a dispute, when out came the microscope; and Greville's cryptogamical work decided the fungus on *Berberis vulgaris* to be *Ecidium berberidis*. Subjecting that on the Wheat plant to a power of 300 diameters the first glance was enough to show a difference in the two fungi, identified at once as *Puccinia graminis* by my scientific friend, who never kept his microscope, nor books, nor accumulated information out of the reach of a poor man.

Irrespective of its claims as a hedge plant, in which respect it about ranks with the Privet, it will be admitted on all hands that the Berberry is a highly ornamental shrub, whether planted in large shrubberies or by the side of woodland walks. Besides its peculiarly ornamental character it is of easy culture, requiring but little care after first planting.

Berberies may be best treated of in two classes—the deciduous and the evergreen.

DECIDUOUS SPECIES.—Of these *Berberis vulgaris* is the type. They are suitable for woods, where they form, as mentioned before, a capital cover for game, and for large shrubbery-borders; but they are not suitable for planting in groups on lawns, for these plants should be as ornamental in winter, for the most part, as in summer, and this the deciduous character of these Berberies in a great measure prevents.

In planting them in shrubberies, it is necessary that the ground should be trenched deeply without turning up too much of a clay subsoil; and if that be wet, drains should be cut 4 feet deep and 21 feet apart, with a suitable fall and outlet. If the ground be poor, a liberal dressing of manure or leaf mould will contribute much to the prosperity of the shrubs; and a barrowful of fine, but not very rich, soil put a little under, around, and on the roots at the time of planting will materially assist the plants to form fibres and roots, and give them a start.

Half the height which any shrub attains is the proper distance to plant from a walk, and its full height the distance from plant to plant in the shrubbery. Most shrubberies, however, are faced with some of the under-shrubs, or lower-growing kinds; consequently the taller kinds may be planted

at a greater distance from the walk, so as to allow of those of low growth being planted in front of the border, so that, even when of full size, they will not need cutting back or clipping to prevent their encroaching on the path or space beyond their limits.

Every tree or shrub should be planted at such a distance that it will never be made by crowding to assume an appearance contrary to its natural habits.

Were I forming a shrubbery I would have no duplicates in it, for no amount of beauty can be pleasing unless it be varied. Shrubberies of the present time have no beauty beyond that seen at first sight, for such are mostly composed of the commonest shrubs purchasable, and have nothing to recommend them beyond cheapness, which is not commensurate with the interest lost. Were no duplicates admitted the shrubbery would afford an interesting field for study at all seasons, and take hours instead of minutes to inspect before all its beauties could be noticed.

I would distribute shrubs in mixed shrubberies, so as to present a good face to the eye; but, at the same time, with a variable yet harmonious aspect. But were the place large I would plant each natural order in groups, after the style of an arboretum; and with a view to this I would place the *Berberidæ* in the foremost rank. A group of Berberies on a lawn would be a beautiful object in May when our flower gardens are little better than fallow fields, and highly ornamental in autumn from the effect produced by their berries. Disposed of in that way, I should plant the deciduous kinds in the centre of the group and the evergreens chiefly around them, always taking into consideration the height of each species and their character of growth. I should not plant a straggling grower in front, but put it behind a compact grower.

In planting, however, the ideas of individuals vary. Some would object to planting deciduous shrubs and evergreens together in groups, and it certainly detracts much from the beauties of evergreens when they adjoin deciduous trees, especially when seen on the same level with them: therefore I would only employ evergreen Berberies for groups on lawns, unless I were forming an arboretum, when I might plant the deciduous and evergreen together.

PROPAGATION.—Seeds of the common kinds, deciduous and evergreen, may be sown in sandy loam, in the open ground, on nursery-beds in March or April, covering them with fine soil about half an inch deep; but seeds of the evergreen species, as *Berberis Fortunei*, *nepalensis*, &c., should be protected in a cold frame until the seedlings are fairly up, and when of sufficient size to handle transplanted into nursery-beds, and afterwards further transplanted annually or biennially, allowing more room each time between the plants, until they are of sufficient size to plant out finally.

Seedlings are such a long time before they flower compared with plants raised from layers, division of the root, or suckers, that it is not a very advisable method of propagation.

The deciduous species are best raised from layers, and the evergreens by suckers, with a portion of root attached to each when taken from the parent. Layering may be done any time whilst the plants are at rest; but about this there are many opinions. Some will insist that it ought to be done when the sap is descending, for then a callosity is sure to be formed; but others uphold that it is best done before the sap rises, for the plant emits fibres more rapidly then than at any other period, and a tongued branch is more likely to callus at that time than when the plant is all but at rest. I find spring the best time for layering and getting plants of any kind to root quickly; but in the case of the Berberry it is immaterial what time they be layered, if tongued like a Carnation to facilitate the process, and pegged securely under the surface, leaving the slit open, and allowed to remain attached to the parent plant for twelve months from the date of the operation. The layers then may be detached from it, taken up with as much soil as will adhere to the fibres without falling off, and planted either in beds to gather strength, or at once into the places where they are to remain.

Division is simply taking up an old plant and clipping the side shoots off with as much root adhering to them as possible. Or digging round an established plant, and so opening

a trench, and then taking off the suckers without disfiguring the parent or checking its growth so much as lifting would. These suckers are planted in lines, three in a four-foot bed, and the plants about a foot apart in the line, more or less according to their size, from whence after a couple of years' growth they are transplanted to their final quarters.

After planting, deciduous Berberies require very little management. The shrubbery should have the weeds kept under, never allowing them to seed, and be slightly hoed and raked over at least twice during the summer, besides any weeding that may be required, and a general clearance of decayed wood and leaves after all the latter are fallen. When hard frost prevails, a couple of inches of decayed leaves or other vegetable matter thrown on the surface will materially increase the health of the shrubs; and however much the flower-beds may require a little of this vegetable earth I would not forget to let the shrubs have the decayed remains of the leaves taken from them the year before. I object to digging amongst shrubs at any time, especially when the roots nearly occupy the whole of the ground, and are close to the surface. The surface roots of shrubs are of as much moment to their wellbeing as those of a Vine are to successful Grape-growing. Transplant a tree every year, and it becomes a dwarf; and shrubs in like manner, robbed of their roots annually by surface-digging, become stunted. Pruning must be limited to cutting-out irregular growths and such as overlap each other, as well as any dead wood that may be found. Should any shrub become unsightly it may be cut down; but if the plant be very old it would be better to stub it up and plant a young one, having first renewed the soil.

EVERGREEN SPECIES.—These are suitable for beds and groups on lawns. In either case the ground should be dug deeply, and a liberal amount of leaf mould or well-rotted stable-manure added, and if the turf has to be removed it should be turned in. Turf, however, makes such a nice compost for plants, pot Vines, Pines, &c., that few gardeners can resist the temptation to rob the intended occupant of the bed of its due share of decayed vegetable matter by taking the turf away to the compost-heap. Turf is so difficult to come at in most places, that we can hardly insist on its being dug into the new bed; but still, every barrowful of turf taken away is equal to a barrowful of dung, or two of decayed leaves: therefore, for every barrowful of turf removed the same quantity of vegetable matter should be returned to the bed.

Where the ground is of a clayey nature the soil should be taken out 18 inches or 2 feet deep, and its place filled with a compost formed of two-thirds rich loam and the remainder leaf mould with a sprinkling of river sand. In digging-out this hole or bed another point must be taken into consideration: Can the water escape readily through the bottom of the bed so as to prevent stagnant water lodging? If not, a drain must be cut to take away the water that will filter to the bottom, and where, unless there be a drain to carry it off, it will very soon cause the shrubs to assume a sickly appearance. Without drains in clay soils, beds dug out a couple of feet deep are little short of a swamp during the greater part of the year, and the last plant to put in such beds is the Berberry, for like the Sikkim and Bhotan Rhododendrons they are all natives of the hills, where the rainfall is large, but the substratum of the soil of such a nature that no water can lodge so as to become stagnant.

Evergreen Berberies are better planted in early spring, but any time from the middle of October until April will answer; and even they may be removed in summer immediately after flowering, when it is possible to take up with a ball, and water freely for some time after planting. They may be planted in groups on lawns without any preparation of the soil, but then, unless the soil suits them they will do anything but thrive.

Whether in groups or in beds they need little pruning, which should be confined to cutting-in straggling growths, and such as are weak and old. The beds should be kept clear of weeds and leaves, and raked roughly occasionally to prevent moss forming on the surface. A dressing of leaf mould will tend to increase their vigour, and if it be pointed-in with a fork the bed will have a neat appearance during winter. The leaf mould may be put on any time in the autumn.

Some of the evergreen varieties make handsome pot plants; in fact, all the evergreens are useful grown in that way, either to ornament the conservatory in spring, or to plunge in the flower-beds in winter, where their evergreen character is more beautiful than red brick, no matter how fine the tracery, and their rich yellow flowers impart a charm in spring to an otherwise anything but garden-like object.

I by no means deprecate the present rage for flower gardens, but I wish to see them more like a garden in winter and spring than many are at present. Mr. Beaton (the loss of whose pen every amateur and gardener deplores whilst sympathising for his affliction), the father of the massing system, had shrubs of low growth to succeed the gaudier summer occupants, with other spring-flowering plants, to give at least an interesting character to the beds during winter and spring, if not a good display at the dull and reviving seasons. If a garden be worth having fine in summer, it surely is worth making interesting in winter. The evergreen Berberies are so beautiful, compact, and low-growing, as to fit them for an honourable position in any arrangement of plants required to be interesting in winter and spring.

The following list includes some of the best species, most of which are of a highly ornamental character.

Those marked thus * bear fruit, which makes excellent preserves; and evergreens are indicated thus †. The others are deciduous, or their foliage becomes so much browned in winter as to be not suited for beds.

* Berberis vulgaris.....	8 feet ...	England.....	April and May.
† vulgaris violacea.....	8 feet ...	England.....	April and May.
† vulgaris alba.....	8 feet ...	England.....	April and May.
† vulgaris nigra.....	7 feet ...	Europe.....	April and May.
† vulgaris purpurea.....	6 feet ...	Europe.....	April and May.
† vulgaris lutea.....	6 feet ...	Europe.....	April and May.
† vulgaris asperma.....	6 feet ...	Europe.....	April and May.
* + duclis.....	8 feet ...	Austria, Magellan.	May.
† canadensis.....	6 feet ...	Canada.....	April and May.
† sinensis.....	4 feet ...	China.....	April and May.
† aristata.....	6 feet ...	Nepaul.....	April and May.
† fascicularis (Mahonia).....	8 feet ...	California.....	April and May.
† ilicifolia.....	4 feet ...	Terra del Fuego.....	July.
† Wallichiana.....	4 feet ...	Nepaul.....	May and June.
† heterophylla.....	4 feet ...	Magellan.....	May.
† trifoliata.....	4 feet ...	Mexico.....	April and May.
† nepalensis.....	5 feet ...	Nepaul.....	May and June.
† asiatica.....	4 feet ...	Nepaul.....	May and June.
† empetrifolia.....	8 feet ...	Magellan.....	April and May.
† dealbata.....	6 feet ...	Mexico.....	April and May.
† Darwinii.....	5 feet ...	Mexico.....	April and May.
† Fortunei.....	5 feet ...	China.....	April and May.
† Leschenaultii.....	5 feet ...	China, Nelligherries.....	April and May.
† intermedia.....	4 feet ...	China, Nelligherries.....	April and May.
† japonica.....	4 feet ...	Japan.....	April and May.
† glumacea.....	4 feet ...	Japan.....	April and May.
† Bealei.....	4 feet ...	Japan.....	April and May.
† crassifolia.....	4 feet ...	Japan.....	April and May.
† diversifolia.....	4 feet ...	Japan.....	April and May.

In addition to the above, there are *B. tinctoria*, *Hookeriana*, *Jamiesoni*, *Neuberti*, *trifurca*, *umbellata*, and *tenuifolia*, chiefly from Nepaul, all well worth looking after, and several more in the great nurseries undergoing a period of probation, and I hope some correspondent will give us a brief description of them, with hints as to their cultivation.

The *Mahonia aquifolia* is so closely allied to the Berberry, that I cannot refrain from noticing it. It is second to the Laurel only in usefulness, and yields to no evergreen under-shrub in the beauty of the flowers in early summer, and its beautiful purple berries in winter; these are produced in far greater abundance than those of the common Berberry, and make quite as good a preserve. Planted in woods it affords one of the best, if not the very best, cover for game. On a lawn it makes a good bed or group, and in shrubberies and by woodland walks it is quite at home. The treatment recommended for evergreen Berberies suits it, but it will thrive in nearly all soils and situations without any trouble beyond planting.—GEORGE ABBEY.

SLUGS ON STRAWBERRIES.

In reply to your correspondents, who inquire the best means of protecting Strawberries from slugs, I would advise them to act in pursuance of the old adage, "Remove the cause," &c., by making one or two sowings of sifted air-slaked lime over the beds, and, indeed, over the whole garden; for I have never found it injure even the tenderest

seedlings when used in moderation early in spring. The best time for performing the operation is on a mild damp evening. Choice may be made of such following several dry days when the slimy race are sure to be depasturing in great force. By repeating this operation a garden may be entirely cleared of them.—G. E.

FROST OF JULY 19TH—LAYING DOWN TURF.

THE frost of July 19th was very severe at this place (Desborough, Northamptonshire); all Potatoes not protected by fences were severely injured, quite as much so as on the night of May 1st. A crop of Buckwheat I had growing in an exposed situation was almost entirely destroyed.

I should feel obliged for any information as to the best way to lay down a moderate-sized lawn.—H. H. C.

[If you can obtain turf from a nice pasture with a fine sward upon it, and free of Daisies, Buttercups, and Plantain, we should prefer turfing to inoculating, or sowing with a lawn-mixture of seeds. Should the turf at hand be good, having a sprinkling of Suckling Clover in it, but not sufficient to turf the whole, you would do well to inoculate, tearing the turf into pieces about 3 inches in diameter, and placing them 6 inches apart in quincunx arrangement, and then strewing over all a few pounds of lawn-seed mixture. Do this in showery weather in April, and you will have a finer lawn than from turfing, and one not half so liable to become brown in summer. But if the turf at hand is coarse and full of weeds, seeds will serve your purpose better than turfing or inoculating, for nothing is so ugly as a rubbishy lawn, and no finer ornament exists in gardening than a lawn of fine grasses well kept. Early in autumn, not in winter, and in February and March, are good times to turf and inoculate, and the latter part of August and September, March and April, to sow lawn grass seeds.]

PREVENTION OF MILDEW ON VINES, PEACHES, &c., IN ORCHARD-HOUSE.

MY vineries and orchard-house have been quite free from this disease this season, a very simple method of prevention having been adopted. Take the upper end of a worsted stocking, tie up in it some very dry sulphur powder, and fasten it to the end of a long stick. About three times a-week, in the daytime, shake this bag of sulphur. The house will in a few minutes be filled with a fine dust, which settles in an almost imperceptible form on every leaf, and this is quite sufficient to act as an antidote to fungi.

The health of all my vineries has been perfect; the fruit of the largest size and the finest quality. This day my gardener has gathered thirty-one dozen of Peaches and Nectarines of the best quality from the large orchard-house, besides many dozen of inferior size, completing upwards of sixty dozen of Peaches and Nectarines within the last four days.

The ventilation of my houses being perfect, as far as anything can be perfect, the flavour of the fruit is excellent. In my orchard-house I have gathered Peaches this season measuring from 9 to 10½ inches in girth.—A CONSTANT READER.

HARDY DECIDUOUS TREES.

(Concluded from page 72.)

THE SWEET CHESTNUT is certainly not so widely spread as the Elm, Oak, and Beech, and it is questionable whether it is really an indigenous tree or not. It is, however, one to which public attention has often been directed, some of its admirers giving it all the qualities of the Oak. This is more than questionable as a timber tree; but as one for ornament it is scarcely, if at all, inferior. The dark glossy green of its foliage, with the numerous spikes of bloom by which the adult trees are studded in August, give it quite an interesting appearance. The single tree always shows a wide expanse of top, and as an avenue tree, it has few rivals. It, however, only thrives on dry, stony, or sandy

ground, and in such a place its growth is as rapid as the Beech. It attains nearly if not quite the same dimensions—perhaps will exceed that tree when the specimen becomes old enough. Some noble trees in the park at Preston Hall are upwards of 17 feet in circumference at 5 feet from the ground, and they appear quite sound and healthy, and likely to increase in size; but there are not many spots which suit them so well. In many places the tops begin to die, and decay sets in at the collar before they attain anything like the size above stated; while for cold or damp situations they are totally unfit. Perhaps one of the best purposes they are put to is for coppice, the poles being the most durable that can be had for hop-poles; and in suitable places the tree grows as freely as anything that is planted. As a timber it resembles Oak, but is too liable to split when cut up for use in carpentry. Longitudinally it is tough and strong, while transversely there is not sufficient adhesion between the layers of each year, and the consequence is that when it is sawn up pieces splinter off.

SYCAMORE is a hardy tree, growing freely in most situations, and very often where scarcely any other will live. As a single tree it withstands the wind well; and while we see most trees bending or leaning in one direction in accordance with the prevailing high gales, the Sycamore rarely shows any difference. It also withstands the sea-breeze as well as most trees. It likes good ground, grows rapidly and to a large size, and rarely dies off. There is in Cobham Park a very fine tree of this kind which is connected with some historical event; the girth near the bottom I believe to be nearly 22 feet. The soil it is growing in is dry, though not particularly so, and it is also tolerably deep. As a single tree the Sycamore affords more shade, perhaps, than any other, the large leaves thickly clustered together tending to make the Sycamore more dense than any other. Its leaves, however, become blotched during summer, and fall short of the clear dark green hue of the Sweet Chestnut.

THE LIME is, perhaps, the quickest-growing tree we have on ordinary soils, and when young it will even excel the Elm. It makes an avenue quicker than anything else, and, being very hardy, rarely suffers a mishap. There are fewer branches blown off the Lime than most other trees, and the number of avenues of it are too well known to require comment. Its lower branches hanging on the ground give it a cool shady character, while the aspect of the tree is anything but one of solemn gloominess.

OF THE ORIENTAL PLANE I wish I could say something more favourable, as its appearance at times is all that can be desired; but some excellent specimens we had of it here became much diseased some years ago, and several have died, while the others have dead tips and other appearances of ill health. It is also a tree of foreign growth rather than indigenous, and less likely to become an aged honourable member of the sylvan community. When healthy it looks well. The foliage is more clear than the Sycamore, the latter being rarely without black spots.

THE ASH is a sturdy native, presenting, perhaps, greater diversity of form than any other tree; but for park scenery it is certainly not held in such high esteem as many others. It is, however, not by any means in consequence of its lacking due proportions that it is less esteemed. The name, perhaps, has a something to do with it. Some little time ago I measured one in the park at East Sutton that was upwards of 22 feet in circumference at 4 feet from the ground. Its top was also in proportion.

THAN THE WALNUT perhaps no tree, with the exception of the Oak and Yew, has a more venerable appearance when stricken with age. The hoary whiteness of the bark, with now and then the fracture not healed over where a limb has been blown off, gives the Walnut a fine appearance. They are, however, better adapted for a group or for single trees than for an avenue. The diversity of their growth renders them unsuitable for that purpose. They like a good soil, not wet and yet not very dry. One of the best fruit-bearing trees I ever knew was in Northumberland.

OF THE beauty of THE HORSE CHESTNUT while in flower much has been said, and certainly it does then look well. The growth and outline of the tree is also good, but the foliage is not the best. It is, however, a favourite, with

many people, is of rapid growth, and not particular as to soil. It is, however, liable to have large limbs blown off in summer—even young trees are sometimes almost split in two by fractures in this way.

THE LOMBARDY POPLAR forms an important feature in the landscape of many places; but it is certainly not of quicker growth than the Black Italian, which seems to outstrip anything it comes in contact with. For planting occasionally in formal belts they help to break the outline, and as such are very useful; but they are hardly wanted in dressed ground, nor even as single trees in a park, although some in Lord Torrington's park at Mereworth, in Kent, look well, having attained an extraordinary height. The White Poplar has little to recommend it.

There are many other deciduous trees of more or less merit. The Maples at times attain a good size; Hornbeam seldom grows so large as the Beech. An old Thorn is as noble a park ornament as anything that grows, and now and then a Willow attains to the goodly proportions of a timber tree. Its downy white leaves, turning with the breeze, contrast strongly with the hues of the other trees by which it is surrounded. It is not fair to enter the dressed ground for specimens fitted for outside work, or we might find large Tulip trees, Ailanthus, Liquidambars, and such like; but these are not English trees, and must await a notice elsewhere. We must not, however, omit to notice the Birch, not for its size but for its singular beauty and its adaptability for those wild elevated positions where many other things would hardly live. Widely differing from this is the Acacia, a tree not by any means unsuited for park scenery, and requiring dry ground. The timber of this is, perhaps, as hard as any home-grown wood we have, but I am not prepared to say that it is so durable as it was expected to be when it was first introduced. It is, however, questionable whether it will ever become a long-lived tree; and, like the Horse Chestnut, high winds are liable to blow off large branches. Some other trees might also be mentioned here; but the above are the most important and useful ones.

In concluding the above hasty glance at our most important hardy deciduous trees, I hope some of our readers who reside in districts where specimens of remarkable size exist will be kind enough to forward to the Editors the dimensions of those trees, for large trees are certainly deserving of as much attention as large animals or large fruits; and the latter having had their due share of attention of late, let us try and do justice to the most ancient, most noble, and certainly the grandest productions of the vegetable world.

J. ROBSON.

PROPER STOCKS FOR GRAPE VINES.

THIS is a subject which, as it presents itself to my mind, has not received from cultivators the amount of attention which it deserves; and the object of this communication is not so much to relate my own experience in the matter, as to call the attention of others to it, and invite their co-operation with a view to discover by experiments the stocks on which the different varieties succeed best. Reasoning from analogy, there can be little doubt but that the Vine can be influenced both as to the quantity and quality of its produce by the stock it may be grafted on, as well as other fruit trees, and practically I have found this theory correct as far as I have been able to test it, as the following instances will show. When Snow's Muscat Hamburg Vine made its appearance I procured a plant of it, which I planted in a house along with Black Hamburg Vines. The latter have succeeded perfectly well, but I never had anything like a fine bunch on the Muscat Hamburg; the berries were unequal in size, the bunches loose, and not in any case much over a pound weight. Unwilling to give up growing a Grape which is, perhaps, the highest flavoured of all Black Grapes, I inarched it on Black Hamburg stocks during the summer of last year, and at the present moment I have six bunches on each of these inarches, the lightest of which will weigh 2 lbs., the heaviest 4 lbs., with full-sized equally-swelled berries. The next instance is of an unfavourable character. It is that of a Bowwood Muscat inarched on a Black Barbarossa; this retarded the ripening of the Grapes a month as compared with the same Vine

on its own roots. I might mention several others, but those two are enough to show that the stock has an influence on the produce of the Vine, and may induce all who have an opportunity to make one or more experiments and relate their results, and in this way much valuable information on an important subject may be obtained. As far as my own experience carries me I am disposed to think that the Black Hamburg is an excellent stock. I am also disposed to think that the Raisin de Calabre will prove a good one, and probably the Syrian. On such stocks I would expect the Frontignans and other tender Grapes to grow as freely as Hamburgs, but actual experiment alone can determine this. If some of our nurserymen would import such hardy varieties as the American Catawba and Isabella Vines, I think it very probable that they would prove valuable stocks for parts of the country where the soil is cold and the climate wet.—WM. THOMSON, Dalkeith Park.—(Scottish Gardener.)

THE CASTLE KENNEDY FIG.

I HAVE read with some interest the notice of this Fig in the report of the Royal Horticultural Society's Fruit Committee in your Journal of the 7th ult. I feel interested in this subject because I have had an opportunity of eating this Fig. I own, however, to some surprise at seeing its flavour reported as not first-rate. Of course I have no judgment that can be opposed to professional opinions, but I have often eaten good Figs, and do not remember tasting any of better flavour. Perhaps the large fruit sent up for exhibition might not have been so highly flavoured as those of an average size. It may, perhaps, be true that the original of this sort was a "Large White Genoa" some century and a half ago; but if so, the altered shape, size, and colour—and I venture to think flavour too—which it has acquired by so long a domicile in the "land of the mountain and the flood," should entitle it to a distinctive name; and if I were a Scot my feelings of nationality would, perhaps, lead me to insist upon the right of this fruit, by the ordinary laws of domicile, to the specific name of "Castle Kennedy." Not being a Scot, I content myself with the hope that the knowledge of this Fig will not any longer be confined north of the Tweed; and if its cultivator, Mr. Fowler, should read this letter I trust it will induce him to send a larger assortment to some future Exhibition, and thus show our southern cultivators that if they want a really first-class Fig they have but to cross the border for one, and induce them to give southern Fig-admirers an opportunity of forming their own judgment.—A CONSTANT READER.

GROWING TOMATOES UNDER GLASS.

IN the absence of more full and definite information as to the exact conditions under which a correspondent, Mr. Fisher, has failed in getting a crop of Tomatoes in his Peach-house, I would suggest that the want of success may arise from either of two causes, or from both combined.

In the first instance, if they are growing in a shaded part of the house the absence of the necessary amount of light may cause an imperfect development of the fructifying organs.

In the next place, it is possible from their being so robust in growth the very same effect, to which reference has been made, may be produced by an undesirable development of leaves and young shoots, which crowds the clusters of bloom, and prevents the necessary action of light and air.

Either of these causes, or the two combined, are what may be suspected from the statement that the plants are much more vigorous and in better condition than plants which are fruitful in the open air.

Try what a closer imitation of the circumstances of the out-door plants will do to produce fruit in the strong plants. If they are full of large sappy leaves and young shoots, let such a proportion of both be removed as will fully expose the bloom to the sun and air, and cause the energies of the plant to be more concentrated to the blooms. At the same time let the plants be kept rather drier at the root.

This mode of proceeding will be likely to remedy the evil if it arises from the causes named, and is very commonly resorted to when the plants show signs of running to leaves and young shoots instead of being as fruitful as is desired; and as far as our own practice is concerned the pinching and disleafing has always proved successful when there was a disposition to barrenness.

The Tomato, as most gardeners are aware, can be most successfully cultivated under glass, and is generally resorted to in localities where the climate will not ripen the fruit when trained to a south wall. It is a good plan to let them attain a considerable size in pots before planting them out. Their being somewhat potbound for some time of course throws them into a fruiting condition, and there is little

fear of their becoming too stunted after being planted out. Such is not their tendency at all, but the very reverse.

For the production of Tomatoes early in the season there is perhaps no better way than that of growing and fruiting them in pots, unless, perhaps, where they can be planted out and kept warm all winter: then they become almost perpetual in bearing. When grown in pots seed should be sown in autumn, and they can be wintered in a cool dry stove, and shifted on in spring into 10 or 12-inch pots. They ripen their crop early in summer; but under all these circumstances it is necessary that they should be well pinched back as they make growth, and that they be kept thin of leaf, so that the blooms be not smothered-up.—D. THOMSON, *Archerfield Gardens*.

COLOCASIA ODORATA.

THE fragrance of this species renders it a desirable subject in all collections of stove plants. The diffused odour, as it pervades the entire atmosphere of a hothouse in which the plant is blooming, resembles that of *Mignonette*; but the more powerful and concentrated fragrance which is experienced on nearer contact with the plant, is of the sweet aromatic nature of that of some *Orchids*. The *Colocasia odorata* is not a novel plant, but it is not common. It is one of the arborescent aroidaceous plants, which give such a tropical air to collections in which they occur. This species grows with a caudex of 3 to 6 feet high, and from 4 to 6 inches in diameter, and is then crowned at the top with a head of large, narrowly cordate leaves, supported on long stout footstalks, and traversed by prominent veins. The flowers grow from the axils of the leaves towards the centre of the plant, and stand erect among the foliage. The spathe is about a span long, contracted below the middle, and then expanding into a concave or boat-shaped membrane, which at first stands erect, encircling the spadix, but ultimately bends over it like a hood. The spathe is green at first, but acquires a yellowish hue when at maturity. The spadix is club-shaped, and shorter than the spathe.

The foliage of the *Colocasia* is the seat of a waxy secretion, which, though scanty in the plants cultivated in our hothouses, is yet produced in considerable quantities when the plant is growing in its natural climate. The secretion is formed exclusively on the lower face of the leaves, and is confined to the axils of the principal nerves, where the cellular tissue produces it, and from which points this waxy substance extends sometimes over nearly the whole inferior surface of the foliage. In the cultivated plant it only exists in small scales, at the utmost not larger than the human nail.

A curious property possessed by the plants of this family, is the evolution of heat at certain periods of their inflorescence. This has been noticed by various observers, but apparently first by Lamarck, who, in 1777, made the discovery upon *Arum italicum*. The most exact experiments, however, are those of M. Adolphe Brogniart, made in 1834, upon a plant of the *Colocasia odorata*, which developed four

"The first flower began to expand on the 4th of March; but it was not till the 6th that the escape of pollen from its anthers commenced, and the increase of temperature on the spadix was perceptible to the touch. A very small thermometer, when applied to the flower, indicated a temperature in the air of 23° centigrade, while the spadix close to the fertile stamens, was 26°, and the club formed by the abortive stamens was 30°, the difference being 7°. The heat of the flower gradually diminished, and, in the evening, its temperature was the same as that of the stove. It is remarkable, however, that, while all the other *Aroidæ* that have been examined on this point, appear—when the heat has once disappeared,—never to regain it, the plant under consideration exhibited the same increase of temperature at

the same hour (2 p.m.) of the following day, and for four days it continued, although with gradually diminishing intensity, to present a similar phenomenon, when the flower finally faded.

"Another blossom having appeared shortly after, I adopted many precautions which should enable me to watch its progress. I procured a very delicate thermometer, applied it accurately to the most sensible parts of the flower; and protected the bulb by folds of flannel from the influence of the circumambient atmosphere, and by a purple shade from the rays of the sun. Another thermometer was suspended

in the stove, not far from the plant, to give the temperature of the stove. For six days a striking increase of heat took place in the flower, attaining its maximum about 4 p.m., and totally ceasing during the night and early morning. The greatest difference between the temperature of the flower and the general atmosphere of the stove, was 11°; and, as in the first blossom examined, so the central portion of the club of abortive stamens was the part which exhibited the heat most powerfully; next the base of that club, and then the stamens which were fertile."

The *Colocasia odorata* is a native of Pegu; is a free-growing plant under cultivation, and requires plenty of room both for its roots and leaves; the latter, indeed, it is which give to the plant its truly noble aspect.—(*Gardener's Mag. of Botany*.)



STRAWBERRIES FAILING ON A CLAYEY SOIL.

I AM making a new Strawberry-bed, and shall be obliged for advice about the soil. The natural soil of my garden is stiff clay with yellow subsoil, and though I have tried many things, I have failed in getting Strawberries to bear well in it. The aspect of the new bed is nearly due south, in front of a wall; and if you advise it, I am willing to dig out the natural soil to the depth of 1½ or 2 feet, and put in any compost you recommend.—T. J. B.

[As Strawberries generally succeed on a clayey soil we think there must be something radically wrong in your case. Does the soil want draining? If so, do it effectually at once. We confess to being unwilling to recommend extensive wheelbarrow-work in the way of removing and replacing any great quantity of subsoil; but if it be absolutely unfit for vegetation, this may be done with advantage. If the subsoil is a retentive clay, burning a large quantity of it on the spot will be attended with much good, and the mode we have adopted is this: Choose a suitable smooth place for the hearth, then cut two small drains to admit air, crossing each other in the centre, about 4 inches broad and the same in depth. On these lay some bricks, and, in the centre where they meet, a good heap, of brickbats or stones. The fire is kindled then and may consist of any description of vegetable rubbish, over which lay lumpy pieces of clay, adding more fuel and clay daily as the fire gains strength. The best material we have found for this fuel are the roots of shrubs or trees, not too large, but as much forked or gnarled as possible. These ugly articles are thus used out of the way, and at the same time turned to good account. For some time it would be better to only throw on lumpy pieces of clay; and do not thrust sticks into the heap, or in any other way disturb it until it has finished burning, which may not be for weeks. This, of course, cannot be waited for in your new Strawberry-bed, which ought to be prepared at once by removing a part of the subsoil and digging a large quantity of sand and some good manure into the remainder. Burning, however, is the best permanent remedy for a stiff clay with only a thin surface soil. Deep cultivation with heavy and repeated dressings of lime will do much to prepare it for many crops, but Strawberries in general dislike lime.]

THE FROST OF JULY 19TH.

THE frost referred to recently in THE JOURNAL OF HORTICULTURE I fear was too general. Here, in Herts, it proved equally severe to any chronicled in these pages, our thermometer, a self-registering one of Negretti, indicating 27½°. Yet, though thus showing a temperature of 4½° below freezing, and this within the garden, fortunately few things were hurt, among which we instance those flowers which were expanded upon the Verbenas, whilst the more prominent leaves upon some thousand plants of Geranium Bijou were so injured as to turn brown, and require to be removed. This was done very easily, as they parted from the plants with a slight touch. We are upon a rather elevated site, a river running from west to east of us, and the gardens on its banks showed traces of, for the season, a severe frost. There, in many instances, the Dwarf Kidney Beans and Potatoes were so frozen that their upper portion of growth turned black, and fell over when the sun shone, and Pumpkins in some places were entirely destroyed.

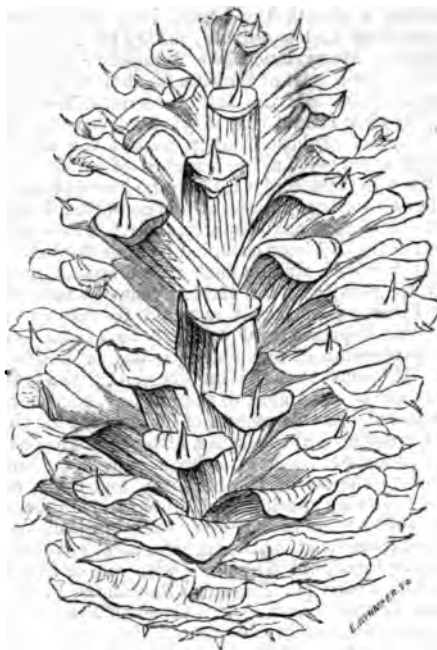
I may add, that my employer informed me a few mornings since, that he had received a communication from his agent in Ross-shire, Scotland, informing him that the frost was so severe there, as to literally cut the Potatoes, &c., to the ground.—WM. EARLEY.

PINUS ARISTATA.

A NEW species of Pine, discovered by Dr. C. C. Parry in the Alpine Regions of Colorado Territory.

During his first botanical expedition to the Pike's Peak region, Dr. Parry, in searching for James' *Pinus flexilis*, found, instead of one, two five-leaved Pines, which evidently had been confounded by Dr. James; thus the discrepancies

of his description are fully explained. His general description of the tree and the edible seeds belong to what we now name *P. flexilis*, while the "erect cones" (smaller than those of *P. rigida*) "with unarmed scales" must be very imperfect young ones of this, or old ones of the new species, which had lost their awns.



On alpine heights, between 9200 and 11,800 or 12,000 feet high, on Pike's Peak and the high mountains of the Snowy Range, Dr. Parry, 1861 and 1862; Messrs. Hall & Harbour (Col. No. 530), 1862. Also, on the highest of the heights of the Coochetopa Pass, nearly S.W. of Pike's Peak (altitude over 10,000 feet), where Capt. Gunnison discovered in 1853 what seems to be this species without fruit; (see Pac. R. R. Rep. II., p. 130;) the leaves which I could compare are those of our plant. Flowers end of June and beginning of July. Flourishing best in the higher elevations and never descending below 9000 feet, in its lower ranges not ripening its fruits as well as on the bleak heights, this truly alpine species—in that respect our representative of the European *P. pumilio*—characterises the highest belt of timber on the peaks of Colorado. On sheltered slopes a tree 40 or 50 feet high and 1 to 2 feet in diameter, it becomes a straggling bush, prostrate, and almost creeping, on the bleak summits of the high ridges. The bark is thin and scaly, even in older trees, not more than 3 or 4 lines thick, of a light greyish-brown colour; that of younger branches smooth, with many large vesicles containing a clear fluid balsam, which remains between the layers of the old bark. Wood white, tough, not very resinous; of extremely slow growth, so that a small, smooth-barked stem of 13 lines diameter exhibited about fifty annual rings, all between 1-6 and 1-60 line wide, the smaller ones consisting of 3 to 6, the widest one of 15 to 25 layers of cells, each cell 0.007 line in diameter. A tree of 2 feet thickness would at that rate indicate an age of over 1000 years; but the annual rings of larger trees growing in favoured situations are wider, and, if a specimen sent by Dr. Parry is not mislabelled, sometimes as wide as one-third line, giving the largest trees a probable age of 500 to 800 years. Branches spreading, very often many of them twisted, stunted or dead; the larger branches and the stem itself frequently covered with young branches or shoots, which seem to keep life in the old trunk. Leaves crowded from the axils of ovate, acuminate, brittle scales, light brown at first, and which, persisting longer than the leaves themselves, cover the branches with their rough blackish remains; leaves light green on both sides without white dots, mostly with numerous exudations of white resin, usually curved upwards, entire on edges and keel, abruptly acutish,

stouter in fruit-bearing, more slender in such trees as produce principally male flowers, in very robust specimens $1\frac{1}{2}$ and rarely even 1, usually about 1 inch long; on sterile branches straight and horizontal, "giving the branches the appearance of so many bottle-brushes." The vaginæ consist of 7 or 8 oblong scales with fringed margins, adpressed and forming a sheath 3 or 4 lines long on the young leaf, soon spreading and squarrose, falling off in the second or third year. Many lanceolate acuminate scales, perule, sheathe the lower part of the shoots; shorter broader bracts, bearing in their axils the male aments, follow next. The aments together form a very short spike, or rather head, 6 or 8 lines long; often these heads persist on the axis for two or even three years with a few bunches of leaves above each, giving the appearance of a leafy spike 1 or $1\frac{1}{2}$ inch long.

Our figure does not represent this condition distinctly, but shows the numerous naked spaces, about ten in number, which in former years had been occupied by male flowers. We have seen branches with sixteen such naked spaces, proving that leaves were persistent for sixteen years—a fact unheard of among Pines, where leaves are said to endure only three years. The stipitate oval ament 3 to 4 lines long, has a proper involucre of four oblong scales or bracts of equal length. It seems that the involucre of the male ament and the form of the ament of the anthers, together with the fruit and seed, offer characters of importance for the distinction and arrangement of species, hitherto neglected probably because living nature has not been studied as diligently as the dried mummies of the herbaria, and these contain so few good flowering specimens of Pines; the number of leaves, so much relied on, is of secondary consideration, and is often calculated to mislead, separating the most natural affinities, such as our Cembroid Nut-pines with one or five leaves, or the pineoid Pines (*P. Pinea*, *P. Sabiniana*, *P. Torreyana*), with two or five leaves. *P. sylvestris* has an oval ament 3 lines long, with an involucre of three equal lance-linear acute scales in the axil of a lanceolate recurved bract, which is deciduous with the ament; anther with a short, nearly entire crista. *P. austriaca* has a cylindric curved ament $1\frac{1}{2}$ inch long, with an involucre of about ten very unequal and almost distichous oval scales, in the axil of a linear-lanceolate recurved persistent bract; anther, with a semicircular entire crista, large enough to entirely hide the body of the anther in the yet-closed ament, and give the latter the appearance of a young cone. Crista of the anther scarcely indicated by a knob, smaller than in any Pine examined by us. Female aments single, or two together near the end of the young shoots, bristling with the lanceolate, aristate erect scales, of a purple black colour. Cones oval, obtuse, $2\frac{1}{2}$ to $2\frac{3}{4}$ inches long, about half as much in diameter, often covered with resin as if varnished; their purplish-brown or blackish colour is found also in a little group of alpine Pines of the Popocatepetl with three to five leaves, discovered by Roehl. Bracts, as in all Pines, not obliterated ("evanidæ") as is usually stated, but much altered, and rather indistinct; more or less thickened and partly connate with the base of the scale; in our species, only the upper obtuse mucronate part membranaceous and free; scales 10 to 15 lines long, and 4 to 6 lines wide at their exposed part; transverse ridge of the rhombic rather flat, protuberance of the scale very conspicuous; the slender mucro or awn, from the small rhombic central knob, 2 to 3 lines long, curved upwards, at last tortuous and easily broken off, has suggested the name for the species. Seed nearly 3 lines long, with the obovate wing 6 to 7 lines long; embryo in all the seeds examined by me, with seven short cotyledons.—(*American Gardener's Monthly*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

SHOULD the present dry weather continue, the water-barrel will be in continual request among all newly-planted crops. Surface-stirring to be also frequently resorted to for the purpose of preventing a too rapid evaporation. Broccoli, where they have been planted between rows of peas the latter should be removed as soon as they are done with, the ground to be then dug, and the intermediate spaces filled in. Cabbages which are the plants intended for spring

use in nursery-beds, that they may get stocky previous to their final planting. Earth-up all the Brassica tribe that are sufficiently advanced, and make succession plantations of Brussels Sprouts, Buda Kale, Broccoli, Coleworts, and Savoy. Cauliflowers, the plants now coming into use to be liberally supplied with water to produce close heads. Chervil, make a sowing for autumn use. Endive, continue to transplant as circumstances require. Another sowing may also be made. Potatoes, the Ash-leaved Kidneys intended for seed may now be taken up and exposed to the sun until they are green. Turnips, seize the opportunity of a shower to get in another breadth of Late White.

FLOWER GARDEN.

The season of the year has now arrived at which the flower garden has attained, or nearly attained, the zenith of its beauty, and the amateur or gardener may contemplate with satisfaction the result of his labour in that department; but if there is anything in the present arrangement of colours to mar the effect, it should be noted for correction another season. Much watering will be necessary here during the heat we now experience. Continue to remove dead flowers from Roses, and give plenty of manure water to the autumn-blooming varieties. Plant-out rooted cuttings of Pansies in nursery-beds in a shady situation. Propagate Pansies, keeping them well-watered if the weather is dry until they get established, and save seed of choice sorts. Plant-out Pinks in beds, water freely in dry weather. Water layers of Carnations and Picotees in dry weather. Keep choice Dahlias thin of shoots and buds. Trap earwigs. Water American and other choice shrubs in dry weather. Shrubs that were planted late in spring will require liberal supplies of water and mulching to prevent evaporation. Train climbing plants neatly to trellises. The lawn during the present hot weather will sometimes require to be gone over with the scythe in the middle of the day to cut off any straggling tufts of grass.

FRUIT GARDEN.

Peaches, Nectarines, and Apricots to have frequent attention in keeping them well nailed to the walls, to guard against high winds. The fruit also to be exposed to the action of the sun as much as possible, without divesting them of leaves, to insure fine flavour and good colour. Continue to make fresh plantations of Strawberries; the ground to be deeply trenched—they like a fresh, stiff loam. The wall fruit trees will demand a good supply of water at their roots, to be mulched with short litter.

GREENHOUSE AND CONSERVATORY.

Keep everything in the conservatory in the neatest order, shifting to other quarters those plants that are fading in bloom, and replacing them by others that have been prepared for the purpose. Keep the creepers neatly trained, and occasionally washed with the engine or syringe. New Holland plants and Heaths that have been standing out of doors for some time to receive immediate attention, if wet and windy weather prevail. Some of the best and most tender varieties to be secured by placing them in cold pits or other secure situations. Persevere in keeping all plants subject to the mildew clear of that pest by dredging them with sulphur, as the season is now arrived when hardwooded plants are subject to it. Persevere in clearing-off all decayed blossoms, and pinching back luxuriant shoots. It will be much to the advantage of the inmates of plant-houses to reduce the shading after this time, to enable the plants to ripen their summer's growth, allowing more air to keep down the temperature, and to check any tendency to a second growth which may show itself, and which can only take place at the expense of next season's bloom. Examine the stock of pot plants to see that none are suffering from want of pot-room or other attention necessary to assist them in making young wood for blooming next season. Young, vigorous plants, however, sometimes require to be watered rather sparingly at this period to prevent their making a second growth. Cinerarias for early blooming should now be growing freely, and should be shifted when necessary; for if they are to form large specimens for blooming in winter they must not be permitted to sustain any check. Remove suckers whenever they can be obtained, and pot them for spring flowering. The conservatory-house will now require most liberal waterings, and care

must be taken to insure a certain supply of water to any plants which have recently been turned out of pots. Passifloras, and, indeed, the greater portion of conservatory climbers, will be growing fast, and will require frequent training. Thin-out weak and overluxuriant shoots, and reserve only sufficient to produce the bloom desired, which will be finer, and the plants themselves more capable of producing well-matured wood when these little attentions are performed regularly.

STOVE.

Such of the inmates here as are intended for the decoration of the conservatory in autumn and early winter should be carefully looked over, shifting those which are likely to want more pot-room, so as to get the pots well filled with roots before the blooming season. Maintain a moist growing atmosphere, and ply the syringe vigorously upon any plant at all infested with red spider. Brugmansias, Clerodendrons, and other large soft-leaved plants should be frequently washed to keep down red spider, and to be well supplied with liquid manure to keep them in a vigorous state of health, which adds so much to their beauty. Various stove climbers, as Quisqualis, Allamandas, Combretum, &c., will bloom for a considerable portion of the summer if the shoots on which the flowers are borne are slightly cut-in when the blooms decay; as anything which prolongs the beauty of these favourites is valuable, the above instructions should be put in practice. As the growing season for Orchids is far advanced, therefore encourage any backward plants with plenty of heat and moisture while this can be safely done. See that plants growing on blocks and on baskets are properly supplied with moisture at the root. Syringe lightly morning and evening, and sprinkle the floors, &c., frequently so as to keep the atmosphere thoroughly moist.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WITH a splendid harvest moon at night there has been glorious weather during the day for bringing to perfection the precious fruits of the earth; but though we had a nice shower on Saturday week, we are still feeling the effects of want of water, yet thankful for the supply the rains gave us. Moved the ground among all advancing crops we could get at to let the air in, and keep the heat out. Cleared away the haulm of Peas that were past being useful in the kitchen; turned part of the ground into Celery-beds, as the plants would spoil if kept longer in their temporary beds. Most of our beds are 4 feet wide, and contain three rows. Watered the earliest-planted, soaking them as well as we could, and earthed-up a piece for early use. On the other plants watered merely threw half an inch of dry soil on the surface, to keep the moisture from evaporating. We never think of acting on the old rule, "Give the Celery a little earthing-up." With the exception of a sprinkling of dry soil after watering, we seldom at this season earth-up until three weeks or so before we want the plants for use, and we do this all at once, having tied the plants previously. We do this for reasons several times given, and based on the natural habits of the plant. Of course, as winter approaches we are obliged to earth-up all Celery, not so much to blanch as to prevent the heads being injured by frost. Prepared part of the ground occupied by Peas, by deep digging and manuring, for winter Spinach, preferring the Flanders or Prickly-seeded, and winter Onions, part to be drawn for salads, and the other part to be transplanted for early spring and summer use. What are still left of such planting have had all the tops laid flat with a rake, which will help the swelling of the bulbs, and arrest mere top-growth. Our main summer crop will not need this attention for a week or two, as they are scarcely large enough yet. Ten days ago they looked as if mildew meant to attack them, but the timely rains settled that matter for us. Took-up Potatoes as we could get at them; and Greens, Brussels Sprouts, &c., having been planted between the rows, watered the plants, and turned the earth over to the stems. Shaded Cauliflowers, Turnips, Lettuces, Radishes, &c., as we dread being out of water, and the sun is as bright as ever. Oh! for a sweet gathering brook! but then there would be something else

we would want. There is less exercise of thought when there are no difficulties to surmount.

Looked after Cucumbers as to stopping, thinning, and watering; shading, too, to save water. Sowed a bed of Dwarf Kidney Beans, to which we can give a little protection. Have had them good in the same place up to the middle and end of November. Sowed also a row of Bishop's Longpod Pea, to which we shall also be able to give a little protection, and if the season is fine we will get some nice late gatherings from them. This hot weather is bringing on succession of Peas before their time. A friend very fond of White and Scarlet Runners, says he is quite in a fix for want of stakes this season, and that he will have no crop. Why and wherefore? We believe as many Beans may be had without stakes as with them; and we have told our friend to nip the point out of his Runners, to cover the ground right up to the plants with short grass or clean litter to keep the pods clean, and there will be a prolonged gathering. We consider the cleanliness of the pods to be essential, as, in our opinion, all such Runners and Kidney Beans are anything but improved in flavour when washed or passed through water before being placed in boiling water. In the strange fancies at the present day, such as introducing Carrots and Beetroot as rows in ribbon-borders, we are very much surprised that no one has tried a row of Scarlet Runners, treated on the nipping system, so as to keep them from 12 to 18 inches high. We know of nothing more striking as a mass of scarlet flowers, and even we might say more appropriate if we could keep at a distance all visions of the kitchen and the stewpan. If we are not the creatures of circumstances, we are in many respects the slaves of associations.

Cleared and watered Mushroom-beds, which in our open sheds are producing Mushrooms as fleshy and nice as they can generally be had in January. There is nothing like simplicity after all if minutiae are looked after. If these little matters are too little to be cared for, the finest materials may prove very unsatisfactory.

FRUIT GARDEN.

Gave copious waterings to Fig trees, which are yet far from being exhausted of fruit. Watered Vines also. Sulphured the pipes in houses, as a little heat is put on on cold nights. Finished gathering out of the early Peach-house, and took the lights off by degrees for painting. The house has lasted two months, the last being that excellent Peach the Walburton Admirable, almost as fine as a Noblesse. Have had a few Nectarines, Peaches, and Plums from orchard-house. The birds thinned our Elton Strawberries before we could net them; but Keens' Seedling, planted out as soon as forced, are already producing some fine berries, with promise of more coming, and netted them, as the thrushes know all about their sweetness. Netted all the Currants we think of saving for tarts and dessert. For the latter purpose we have always noticed that they may merely make a show—no one seems ever to taste them. Netted Gooseberries by placing rails higher than the bushes at the sides and middle of a small quarter, and throwing a net over the whole, securely fastened at the sides. The birds dislike this much more than where a net is merely thrown over the bushes, and there is no difficulty in going inside and taking what you want. Will dig down a piece of Strawberries, and will plant with winter vegetables that had been previously pricked out. Moved all the Strawberries laid in small pots, and began potting them as quickly as possible. We feel obliged to Mr. Gross for his note at page 70. The mode he recommends is a very good one; but we rarely can command the room. We have mentioned the same plan in previous volumes, and also taking the runners from such early-forced plants, pricking them out under glass, and lifting with balls and potting immediately, which is a very good plan if shading and syringing are attended to at once. We have also previously mentioned the plan of taking the runners, as soon as formed, out of doors, pricking them out 4 inches apart, on a slight hotbed, with glass over them, and lifting with balls. In cold northern places we believe that small late runners of this summer, pricked out on a border, to stand the winter, and raised and potted next season, will do the best. For extraordinary crops we have found no plan better than resting the smaller forced plants be-

hind a north wall, shaking them out of their pots in July, and repotting firmly in rich loam, and treating as for younger plants; but in such cases the fruit individually is not generally so fine. In the short article alluded to so kindly by Mr. Gross, the chief subject of discussion was, whether it was better to layer the runner at once in the fruiting-pot, or use a small pot, and to that the remarks were chiefly confined. Our own experience enables us to say that there can be no doubt of Mr. Gross's plan being a good one. From a press of other matters we are a week or two behind in the potting, but there is every prospect of a fine autumn, and a week of such weather soon makes up.

ORNAMENTAL GARDENING.

This, for various reasons, has occupied our chief attention. Arranging conservatory, potting plants, Primulas, Cinerarias, taking cuttings, nipping off every wasted flower from flower-beds, stirring where an inch or two of soil could be seen, clipping and cleaning edgings, rolling walks that were like adamant, so that no mark of the broom should be left at sides where the broom had to be used for clippings, giving a little water as if it were wine, where there were signs of flagging—the *Amplexicaulis Calceolaria* being our most troublesome customer in this respect, tying and fastening where necessary, and rolling the short-shaven lawn that it might be as smooth and easy for the feet as a Turkey carpet. Even the pleasure derived from seeing a fine flower-bed is very much diminished if you must reach it by a walk enough to make a corn scream, or a lawn in hard lumps that the thin slipper of a lady is a poor protection against. —R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers.

PEAR LEAVES SPOTTED (*Hack-eye*).—The leaves are infested with the "Slimy Grub"—the larva of the Pear Saw-fly, *Selandria ethiops*. Syringing with lime water, or dusting the grubs with lime powder, destroys these grubs. —W. W.

GOOSEBERRY CATERPILLARS (*G. E.*).—There are two caterpillars which attack the leaves of the Gooseberry. One is the larva of the *Abraxas grossulariæ*, or Magpie Moth. This is figured in "The Cottage Gardener's Dictionary;" but the caterpillar which is the greatest scourge of the Gooseberry is green, as you describe, and is the larva of a Saw-fly, *Tenthredo grossulariæ*. It has been frequently described in this Journal, but was accidentally omitted in the "Dictionary."

FUCHSIAS AND PELARGONIUMS FOR A WINDOW (*W. Easton*).—Of dark Fuchsias have *Diadem*, *Globose*, and *Voltigeur*; of light ones, *Duchess of Lancaster*, *Pearl of England*, and *Prince Arthur*; of Pelargoniums, *Citrodorum*, *Floribunda*, *Gaines' Scarlet*, *Prince of Orange*, *Rollison's Purple*, and *Sidon*.

VINERY FOR SIX VINES (*An Old Subscriber*).—With the exception of having good heat, we know nothing of your vinery or what you wish to do with it. At something like random, then, we would say, Plant one Dutch Sweetwater, one Black Hamburg, one Lady Downes, one West's St. Peter's, one Muscat of Alexandria, one Bowood Muscat. Any of our large nurserymen will get the Trebbiano for you if they have it not in stock. You may inarch the Stockwood Vine now. To graft, you had better wait until the Vine has rested, and put the graft on a fortnight before you start the Vine into growth. Or you may start the Vine early, and when in full set cut back and graft with a retarded scion. We would try the first. White Grape, as a Muscat, *Balsin de Calabre*, would be best.

ERRATUM.—At page 65 there is no error in printing, but the period is placed wrong in one instance. "All fine flourishes of penmanship should, therefore, be generally avoided." "Unless" should be the first word of the next period ending in a sentence, which alters the sense as to the use of penmanship.

WIREWORMS INJURING VINE ROOTS (*T. C.*).—We would try watering with soot and weak ammoniacal gas water. The surest remedy is to stick slices of Carrots, Turnips, and Potatoes all over the border 6 inches below its surface, examining them every morning and taking out from them the wireworm. A little perseverance will rid you of the enemy. If you had examined the compost well by turning it and mixing some soot and lime with it, you would most likely have escaped the pest altogether.

VINES IN A GREENHOUSE (*A. A.*).—A similar inquiry was answered on another day. Your house, 12 feet long, is large enough for two Vines, and we would recommend one Black Hamburg and one Royal Muscadine. If you plant inside, and the roots are to go outside through the front wall, be sure your inside border is higher than the outside one. We do not know the position of the house; but in general the easiest plan, when the roots are to be outside chiefly, is to make a hole in the wall for the stem and cover what is exposed outside with a box. If you want to keep plants in winter, and the thermometer is never above from 40° to 45°, the Vines will not break until the end of March or the beginning of April, so that you will have no shade of consequence to interfere with the plants from the end of October until midsummer.

FERTILIZING CASTLE GARDEN (*New Forest*).—The smaller walks are gravel and the scroll-beds are filled with bedding plants. We cannot give an opinion as to "the smallest scale" to which it is adapted.

PLANTING RASPBERRY CANES (*Joseph C.*).—It is a good plan to be satisfied with "pretty well," rather than follow such an adviser's instructions, who knows nothing about Raspberries, or he would not advise you to attempt an impossibility—namely, to "cause the canes to fruit two seasons." Planting three canes together is a good plan: it saves stakes. Training to an espalier rail is better, and staking them is an old plan not yet beaten. Raspberries require rich soil, to be planted in rows 4 feet apart and 3 feet from plant to plant. Allow three to five canes to rise from a stool and pull up all the others, thus throwing all the sap into the future fruit-canes. As soon as the fruit is all gathered cut away the old canes, and that will admit the sun and air, which will ripen the young canes perfectly and give you abundance of fruit the year following. A dressing of manure, pointed-in in autumn, is necessary; and the canes, if strong, to be shortened to 5 feet, or, if weak, to 3 or 4 feet, according to their strength.

MOVING A LARGE HOLLY (*W. R. J.*).—Some gardeners prefer moving the *Ilex* (Holly) in spring, during showery weather, not later than May 1st. The latter part of September, and through October, is a good time to plant or move somewhat large Hollies; but more depends on taking them up with a nice ball than on any particular season of transplanting, and being well supplied with water in dry weather until the tree gets firm hold of the soil.

CONSTRUCTING A FERNERY (*Idem*).—Autumn is the best time to make a new fernery, for the rockwork and soil become settled before the plants are planted in March. March is the best time to reconstruct a fernery; but any time will do, providing every care be taken not to disturb any plants in growth, nor expose the roots of those at rest to sun and dry winds.

THINNING MELONS (*A Constant Reader*).—About eighteen Melons will be a fair crop for your four plants. We have taken as many as twenty and twenty-four. We would advise watering the bed moderately, giving air even at night, and letting the Melons become as big as pigeon's eggs before you thin them. You can then select the best formed and the most regularly placed fruit. When so small they take little comparatively from the plant, and will not require it.

LONICERA AUREO-RETICULATA (*A. B. C.*).—You do not state where you reside; but, unless very far north, your plant against a south wall will not need protection.

BOOK ON LANDSCAPE-GARDENING (*B.*).—London's edition of Repton's "Landscape Gardening and Landscape Architecture."

STRIKING GERANIUMS IN THE OPEN GROUND (*Blandyanum*).—The kinds you mention—Christine, Flower of the Day, Mangles' Variegated, and Cloth of Gold—may be all struck in the open ground in August and the early part of September; but we have generally found it advantageous to allow slow-growing varieties of the Golden section to grow the whole season, and take them up in autumn, keeping them rather warm in winter and taking off cuttings in the spring. Cuttings of all the kinds may, however, be put in now, the only question being, Can they be spared from the slow-growing kinds? Cuttings of Mangles' Variegated ought to be put in early, as they are more difficult to keep than most others; but none do better than Christine.

PROPAGATING HOLLYHOCKS BY CUTTINGS (*Idem*).—As it is late for this work, you must select the young shoots that are not more than half grown, and cut them into lengths of two joints and insert them in a pot or pan, which plunge in a slight heat for a short time. June is a better time than August; but they may yet be propagated in the way we have described. About one-half of the leaf may be left on the upper joint, and about 1 inch of the leafstalk on the lower one.

LILIUM LANCIFOLIUM TREATMENT (*J. S.*).—The young roots recently formed, and which have had one year's growth, may be treated exactly as the old one—namely, be ripened gradually, kept moderately dry till planting time, and then potted as before; but if there were a *Rhododendron* bed on good peat, neither too dry nor too moist, we would plant them in it and let them remain until the bulbs are large enough for flowering. In many situations they flower better out of doors than they do in pots, and their appearance is certainly not less beautiful.

LAYERING LONICERA FLAVA (*Blandyanum*).—Although we have had no experience in layering this plant, yet we believe the same rules will hold good with it as with many others, the growing season being the best for the operation, and laying the young shoots into a sandy soil. In a day or two the tips will turn upwards, when the layer may be half cut through and secured by a hook so as to remain firm in the soil. They will speedily become plants.

WATERING (*A Subscriber*).—In two Numbers, June 16th and 23rd, under the title "Using the Watering-pot," this subject was very fully considered.

NAMES OF PLANTS.—(*A. B.*)—We do not recognise the plant said to have "slate-coloured flowers," the scrap is too small to show much character. The so-called Virgin's Rod appears to be a *Phlox*, probably *P. divaricata* or some near ally. It is a native of Virginia, and may be called *Virginia Red*; but the specimen is a very bad one, and has only the remains of flowers, and a better specimen of flower. (*J. D. N. P.*)—Yours is *Strophanthus*

diotomus. (A. Z.)—The smaller of the two plants sent is the Pennyroyal, *Monarda pulegium*. The larger plant is the common Calamint, *Calamintha officinalis* of Babington. (C. H.)—1, *Athyrium Filix-femina*; 2, *Podium vulgare*; 3, *Osmunda regalis*; 4, one of the double forms of the common Feverfew, *Pyrethrum Parthenium plenum*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CHICKENS LAYING—LAMENESS.

We do not know that we can answer many of our correspondents better than by entering at some length into the subjects to which their letters refer. Thus "K. O. T." says, "Will you inform me what is the age at which pullets generally lay? I have now kept chickens and Ducks for nearly twelve years, and I have never remarked a pullet lay at so early an age as this year. I had a brood the first week in February from a pullet hatched some time in March last year. She brought out nine chickens out of eleven eggs, five of which I sold when not ten weeks old for 12s., and kept two, one of which has laid an egg to-day, July 25th. The mother has sat a second time, and brought out eleven chickens from thirteen eggs, and has begun to lay again, having been taken from her second brood about a week ago. This, remember, was a last-year's chicken of the Pheasant-Dorking breed.—K. O. T."

It is almost impossible to state any particular time. It is a question of breed, weather, and management. Food also has to do with it.

It is not the part of any particular breed to lay in winter, nor is it their nature. Pullets arrive at maturity when they attain a certain age, whether that be in May or December; and when they arrive at maturity they lay. No rule can be laid down; we saw an egg laid by a Spanish pullet at Worcester, the youngest-looking bird we ever saw. We have always found Cochins and Brahmas the earliest layers; chickens of these breeds that have been well done, that have had no check, and that are in good health, should lay at from eighteen to twenty weeks old, provided the expiration of this term falls in April, May, or any month before October. If birds are wanted to lay in the winter, those that attain the proper age at the time when the eggs will be wanted should be chosen.

We believe the supply may be made a certainty simply by arranging chickens in such wise that each month shall have its layers. Thus, for November supply, the Brahmas or Cochins should be hatched in May; Dorkings in March, or Spanish in February. It is, however, a mistake to suppose that the fact of keeping a number of May chickens will insure eggs throughout the winter. They will begin in November, but it is more than probable, especially if the weather is severe, that they will not continue to lay more than six weeks, or, it may be, a month. Assuming, then, that they cease laying in the beginning of December, a relay of pullets one month younger than those giving up should be ready. Attention to this will make a supply of eggs a certainty throughout the winter months. Extreme severity of weather must be encountered, and overcome by generous feeding, and all help must be in this way. The only care required in their roosting-houses, even in unusual cold, is security from draughts.

It must be borne in mind hens do not lay in the winter. After laying the first eggs and having been broody, the pullet is a hen, and from that time she lays in the regular season, which begins about March. It will thus be seen, first, that all eggs laid in the winter must be the produce of pullets; next, that to have a succession, the ages of the birds must be arranged accordingly. We do not mean to say hens cannot be made to lay in the winter. A few eggs may be produced by meat-feeding and by stimulating diet; but the penalty is paid, and the eggs are dearly purchased by the destruction of the hen. Disease begins from the moment forced laying is produced, and the price must be paid because the process can only be used successfully with a young hen. The food is thrown away on an old one.

Our observations are principally prompted by the oft-repeated remark that, had people known in time, they would have had eggs all the winter. Few of the May chickens are killed, and therefore, in the language of Friar Bacon's head, "Time is;" and if our readers wish for eggs at the breakfast table in the winter, we believe they can

have them by following our instructions. They are based on the experience of many years, and have never failed.

"CONSTANT READER" says he has chickens two and three months old lame in the legs. He wishes to know the remedy, if there is one.

No fowls are naturally lame when chickens—they may be lame in the legs from weakness. This will be remedied by good diet. They may be lame from very rough stones on the floor of their houses. This can be remedied by raking them off. The most serious remains behind: they may be lame from chill or damp from floors of wood, brick, or stone. The cure is removal and the substitution of gravel or earth, the former preferable. Where objectionable flooring is used, its effect generally shows itself in enlarged knees; and the pain or discomfort arising from them causes the bird to sit down and rest on the leg from the knee to the foot, all that part being on the ground—not with the body poised as it is when at roost, but resting a dead weight upon it, and rising with evident difficulty.

MERTHYR TYDFYL SHOW.

THE seventh annual Meeting of the Merthyr Tydfyl Poultry Exhibition took place on the 30th ultimo, being held in the Market Hall, in conjunction with a show of fruits and flowers. R. T. Crawshaw, Esq., of Cyfarthfa Castle, also offered a large number of prizes for the best-grown vegetables by cottagers, each district in this widely spread neighbourhood having its special prizes, and, consequently, producing an amount of close competition that few of our readers could possibly credit who did not witness it. It is, though somewhat a digression from the poultry department, a pleasing feature to record, that the vegetables thus entered for competition, and grown under many local disadvantages exclusively by working men, were quite equal to those exhibited in the classes expressly appointed for amateurs, and such as would tend much to the credit of any similar meeting even in the most favourable districts.

The Market Hall at Merthyr affords every necessary advantage for the successful holding of a poultry show, being alike spacious, airy, and well lighted. On the present occasion it presented the gayest appearance possible—flags, pennants, and banners meeting the eye in profusion on every side, and many waggon-loads of evergreens were used as decorations. The services of a brass band made the arrangements complete, and, as the weather was every way favourable, success ensued.

Although entries were admissible from any part of the kingdom, most of them came from breeders not far removed from Merthyr; this fact caused the entries to be somewhat limited, still, as a whole, the Show could not be pronounced otherwise than a good one. *Dorkings* came first. This neighbourhood seems rather scanty of Dorking-breeders, only three pens being entered. They were, however, good. This time of year being just about moulting season, the *Spanish* showed to disadvantage, consequently need no particular mention. In the *Game* fowls several very good pens were present. It should be remembered, however, by exhibitors that adult *Game* fowls should always be shown "dubbed," or their chances of success are seriously diminished. To *Game* whilst chickens this rule does not apply. Of *Cochins*, the Partridge-coloured ones were decidedly superior to any of the others, besides being shown in excellent feather. In the *Hamburgs* the Merthyr amateurs seem to have paid but little regard to combs, imperfections in this respect being always a fatal objection, though in these classes abounding. The *Black Hamburgs* on the contrary were truly good. The classes for *Malays*, *Polands*, and *Sebright Bantams* were without a single entry. Some very good *Red Pile Game Bantams* were shown; also capital *Silkie*s, both *White* and *Brown* ones. The entries in the *Single Cock* classes were very limited.

The *Geese* and *Ducks* were very creditable; and in the *Variety* class a splendid *Shell Drake*, "same as a Robin," drew many admirers to its pen.

The poultry prizes offered exclusively to working men were closely contested; a truly useful "cross" between the *Malay* and *Cochin* was here well shown, possessing extraordinary advantages as a table bird, combined with a constitution remarkably hardy during chickenhood.

It appears that for the last season or so the Merthyr Tydfil Show was discontinued. Under its present management, it now appears certain to prove permanent and most successful—an issue it well deserves, neither labour nor expense being spared in its resuscitation.

DORRINGS.—Second, Rev. E. Nicholl, Llandough Rectory, Cowbridge. Third, J. Buckley, Penyfai House, Llanelly. Commended, R. T. Crawshaw, Cyfarthfa Castle.

SPANISH.—First, J. Carr, Hafod, Swansea. Second, R. T. Crawshaw, Cyfarthfa Castle.

GAME.—First, J. Llewellyn, Caerphilly. Second, G. Paddon, Swansea. **COCHINS** (Black and White).—Prize, R. H. Nicholas, Malpas, near Newport.

COCHINS (Partridge, Cinnamon, and Buff).—First, J. Carr, Hafod, Swansea. Second, J. Buckley, Penyfai House, Llanelly. **HAMBURGERS** (Gold and Silver-spangled).—First, T. Davies, Stow Hill, Newport. Second, W. Cuff, St. Fagans.

HAMBURGERS (Gold and Silver-pencilled).—First, J. Llewellyn, St. Fagans. Second, E. Payne, Cardiff.

HAMBURGERS (Black).—First and Second, R. H. Nicholas, Malpas, near Newport.

BANTAMS (Any other variety).—First, T. Davies, Stow Hill, Newport. Second, E. Payne, Cardiff.

ANY DISTINCT BREED NOT BEFORE MENTIONED.—First and Second, R. H. Nicholas, Malpas, near Newport.

SINGLE COCKS.

COCHINS.—First, J. Carr, Hafod, Swansea. Second, G. Paddon, Swansea. **HAMBURGERS** (Gold and Silver-spangled).—Prize, Wrenn.

HAMBURGERS (Gold and Silver-pencilled).—First, E. Payne, Cardiff. Second, J. T. Williams, Penrhoe.

DORRINGS.—Prize, R. T. Crawshaw, Cyfarthfa Castle. **SPANISH.**—Prize, R. T. Crawshaw, Cyfarthfa Castle.

GAME.—First, R. T. Crawshaw, Cyfarthfa Castle. Second, Withheld. **GALLINÆ** (Cock and two Hens).—Prize, R. T. Crawshaw, Cyfarthfa Castle.

GANDER AND TWO GESE.—Prize, R. T. Crawshaw, Cyfarthfa Castle. **DRACK AND TWO DUCKS** (Aylesbury).—First, R. H. Nicholas, Malpas, near Newport. Second, D. Williams, Penrhoe.

DRACK AND TWO DUCKS (Black).—First, Withheld. Second, R. T. Crawshaw, Cyfarthfa Castle.

DRACK AND TWO DUCKS (Muscovy).—Prize, R. T. Crawshaw, Cyfarthfa Castle.

TURKEY COCK AND TWO HENS.—First, R. T. Crawshaw, Cyfarthfa Castle. Second, J. Buckley, Penyfai House, Llanelly.

PRIZES FOR WORKING MEN ONLY.

COCK AND TWO HENS (Any breed).—First, W. Keddart, Penydarren. Second, R. Rees, Brecon Road.

DRACK AND TWO DUCKS.—Prize, W. Cuff, St. Fagans. Highly Commended (Shell Duck), owner not known.

DUCKLING.—First, W. Cuff, St. Fagans. Second, W. Seal, Gwaleod-y-Garth.

CHICKENS.—First, W. Nicholas, Caerphilly. Second, W. Keddart, Penydarren.

Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, Birmingham, officiated as Judge.

NEWMILLERDAM POULTRY SHOW.

ON Tuesday the eleventh annual Exhibition at the above place was held in a field adjoining Chevet Park, and we think it proved a successful one so far as numbers attending and financial matters were concerned. The show of poultry was tolerably numerous, and some very fine birds were exhibited, each variety of breed having some manifestly superior bird included in the number. Among the more notable fowls shown were the *Game* of Messrs. Brierley, Hellewell, and Vickerman; they were splendid birds and shown in good condition. The *Cochins* of Messrs. Dawson and Newton were so good that the Judge had some difficulty in awarding the first prizes. There were other good birds in these classes. *Dorkings* were very good. The chickens were the best we have met with this season. There were only five pens of *Spanish*, and not so good. Golden-spangled were very nice. The chickens shown by Mr. Ellis, of Leeds, were first-rate, and a large figure was offered for them, but they did not change hands. There was a poor entry of Silver-spangles, but the prize birds were good. The Variety class was well filled, and the first prize went to a pen of Golden-pencilled, second to Silvers—both very good pens, beating Mr. Dawson's *Sultans*, *Brahmas*, *Black Hamburgs*. There was a very large show of *Bantams*; there were two classes open for them.

Ducks and *Geese* were not so well shown as we have seen this Show; and the *Turkeys* were very poor.

This part of the Exhibition was under the supervision of Mr. John Croeland, jun., who gave all his attention to the owls, and his arrangements were very good.

GAME (Black-breasted and other Reds).—First, Mr. Brierley, Rochdale. Second, Mr. Hellewell, Sheffield.

ANY OTHER VARIETY.—First, Mr. Dawson, Mirfield. Second, Mr. Brierley, Rochdale.

COCHIN (Cinnamon and Buff).—First, Mr. Dawson, Mirfield. Second, Messrs. H. & G. Newton, Leeds.

ANY OTHER VARIETY.—First, Mr. Dawson, Mirfield. Second, Mr. Brierley, Rochdale.

COCHIN (Chickens).—First, Mr. Dawson, Mirfield. Second, Messrs. H. & G. Newton, Leeds.

DORKING.—First, Mr. Pickard, Wakefield. Second, Mr. Himsforth, Lupset Hall. *Chickens.*—First and Second, Mr. Pickard.

SPANISH.—First, Mr. Vickerman, Chickenley. Second, Mr. Cooper, Hartsley.

PHEASANTS (Golden).—First, Mr. Himsforth, Lupset Hall. Second, Mr. Ellis, Leeds. *Chickens.*—First, Mr. Ellis. Second, Mr. Himsforth.

PHEASANTS (Silver).—First, Mr. Vickerman, Chickenley. Second, Mr. Hellewell, Sheffield. *Chickens.*—First, Mr. Vickerman. Second, Mr. Hellewell.

ANY DISTINCT BREED NOT NAMED.—First, Mr. Brierley, Rochdale. Second, Mr. Vickerman, Chickenley.

BANTAMS (Black or White).—First, Mr. Charlton, Bradford. Second, Mr. Harrison, Wakefield.

BANTAMS (Any other variety).—First, Mr. Hellewell, Sheffield. Second, Mr. Brierley, Rochdale.

TURKEYS.—First, Mr. Waterton, Walton Hall. Second, Mr. Fawcett, Wakefield.

GESE.—First, Mr. Fawcett, Wakefield. Second, Mr. Totty.

DUCKS (Aylesbury).—First, Mr. Fawcett, Wakefield. Second, Mr. Johnson.

DUCKS (Rouen).—First, Mr. Bentley. Second, Mr. Athey.

APIARIAN NOTES.

THE change of weather about the 21st of June brought some fine sunny days, and after the first week in July there was a considerable honeydew for some time, which proved most favourable to the bees, so as to make up in some degree for the loss sustained by nearly three weeks' rain in June, generally the best honey-gathering month in England.

It was vexatious to read of the losses and failures of that enterprising apiarian, "A DEVONSHIRE BEE-KEEPER;" but the question is, Has he not been too experimental? He was unlucky in having three successive bad summers as those of 1860-61-62, and I certainly must condole with him, after so much pains taken practically and scientifically. That such a train of disasters should follow his apparently well-directed plans and operations seems strange; his motto should be "Nil desperandum," and go on.

CORSAIR BEES.—For some weeks my hives have been infested thus early in the season (the 24th of July), and these plunderers have attacked a weak swarm in a box or wooden Nutt's hive. I have been forced to shut these weak bees in for some hours early in the morning, and by these means have destroyed a good many of the marauders as they arrived. Bees generally are most troublesome in this their great failing in spring and autumn.

BREEDING.—This is still going on amongst my bees, as numbers of bees are constantly going to the water-troughs. It seems likely, should the weather prove fine for a couple of months, that the late districts and heath countries will certainly have the advantage. A swarm of a near neighbour's, hived on the 1st of July, has increased in weight nearly 20 lbs. This I attribute to a week's honeydew which came between the 3rd and 16th of July.

DRIVING BEES.—Mr. Woodbury seems to excel in the manipulation of bees; but I agree with "A. W." in No. 121, that driving bees very often fails, and unless the greatest patience and forbearance are used never succeeds. "A. W." also agrees with me about natural swarming; I have no doubt that the spirits of bees and their unusual activity are diminished by the constant practice of encouraging artificial swarming. I call it fighting against Nature. Nevertheless I must own, as an old-fashioned bee-keeper, that the order of the day is all for experimental operations and new discoveries, many of these latter still problematical.

THE WEATHER.—This month of July, as far as it has gone (to the 25th), has been a most extraordinary month. I have seen frost in many years for a great part of the month of May, and snow once or twice in the first week in June; but I have never seen such a variation in the temperature in July in the west of England as in the present month. We have had five or six white frosts; on the 18th the thermometer, before sunrise, stood at 32°. Previous to this, from the 9th to the 16th, the thermometer varied from 50° to 51°, with honeydew for seven or eight days. In exposed situations the kidney beans and other tender annuals were quite discoloured by the frost.—H. W. NEWMAN, *Filsham, Cheshire.*

CHLOROFORM FOR BEES—THE SEASON IN LINCOLNSHIRE.

"A CONSTANT SUBSCRIBER" is referred by you to "Payne's Bee-keeping" for directions to use chloroform for stupifying bees. Perhaps you will permit me, as one who has several times acted upon those directions, to state what has been, with me, the invariable result—that of total subsequent desertion of the hives. The quality of the honey is certainly not affected by it; but if preservation of the bees is also a consideration, it is a total failure; as, after trying it six or seven times some years ago, I always found them desert within from ten to fourteen days, and also carry with them every particle of honey the operator had spared. I would recommend your correspondent to endeavour to acquire confidence in the manipulation of his bees—and confidence is all that is required for any operation—and he will then find that no stupifying agent at all is necessary. I find it practicable to get on without that universal resource of apiarians—the tobacco-pipe, which constitutional infirmity forbids me to use.

It is pleasing to find that in most parts of the kingdom the season has this year been so good. I can state that in Lincolnshire it is some time since it has been so good; and in spite of "foul brood," that has been such a plague to our Devonshire friend, having been introduced into my apiary, I have been able to confine it to the loss of three hives. The general result in swarms and honey is most satisfactory.—G. F. B., *Spalding*.

BEE-KEEPING IN DEVON.—No. XX.

CONVALESCENT.

AS I am relating my own experience for the benefit of others, and am therefore desirous that they should take warning by my failures and follow me only in my successes, I may at once say that the disease has reappeared in the colony whose original queen was stated in my last to have been sent to St. Austell; and I would record at the same time my conviction, founded on experience, that whenever foul brood attacks a stock, partial excision or removal of infected combs is of no avail: nothing less than entire deprivation and transferring into a perfectly pure hive is likely to effect a cure.

In the case also of one of the last two operations described in page 79, I had the mortification a few days after my article was written of finding that the disease had broken out in the new combs, and I have therefore been compelled to resort to an operation of a different, and, I trust, of a more effectual character. The other colony treated in a precisely similar manner, remains, however, perfectly healthy, and was the strongest in my apiary. I say was the strongest, for I have this day (July 30th), despatched it to Renfrewshire, where, in the hands of the bee-keeper of that ilk, I trust it may flourish to his heart's content, and that we shall learn in due course that it has fully indemnified him for a certain amount of "hope deferred" which he has suffered in the matter of Ligurians owing to the unfortunate state of my apiary. One point it will undoubtedly enable him to decide before long, and that is the longevity of worker bees at this season. On the 4th of this month all the combs were exchanged for those of a black stock containing, therefore, black brood, and as the queen regnant is a perfectly pure Italian, the period of the complete disappearance of the ordinary English species will, of course, mark the exact duration of the summer life of the working bee.

Thus far I had acted to some extent on the opinions of English authors, none of whom appear to have been perfectly cognizant of the extremely infectious character of foul brood. Nor could I myself at first realise the virulence of the contagion, being disposed to imagine that the removal of the polluted brood-combs would alone be quite sufficient to work a radical cure. In this idea I was confirmed by one of the ablest of the apiarian correspondents of *THE JOURNAL OF HORTICULTURE*, who, in a letter with which he kindly favoured me on the subject, attributed the whole of the mischief to my experimental operations allowing the brood for the first instance to get chilled, and, therefore, requiring only the excision of the affected parts to work a complete

cure. Experience has, however, proved the erroneousness of these opinions. Few hives of any kind escape the loss of some of their brood every spring from sudden changes of temperature, and the embryos being removed by the bees no farther mischief ensues. In my own case I have often in former years accidentally reduced the population of hives to so low an ebb that more or less of their brood has perished; but this has always been the extent of the injury sustained. As it has been said, that when bees are left to themselves and are allowed to follow unrestrained the impulses and instincts of their nature no such disorders arise, I may be permitted to state that foul brood was unquestionably introduced into my apiary by infected combs from common cottage-hives in which the bees had been managed in the ordinary way.

My next experiment was the mode of cure indicated by Dzierson, who nevertheless advises, as the best course, to destroy immediately by means of sulphur every stock in which foul brood is found to exist. Having deprived the bees of all their combs and placed them in a clean hive, I confined them (first insuring perfect ventilation by removing the crown-board and substituting perforated zinc), without food for twenty-four hours, in order to be certain of their consuming whatever of the infected honey they might have taken from their original domicile. To my astonishment a full third of their number perished during their imprisonment from some cause which I found myself unable to discover, but which appeared not to be accidental, as a similar loss occurred in both of the only two cases in which confinement was resorted to, and caused me on that account to abandon it. Having been allowed to work three days in their new habitation, they were once more unceremoniously ejected, and placed in a hive with a few clean combs, in which they were suffered to remain; all the beautiful combs which they had made during their sojourn in the intermediate habitation being at once consigned to the melting-pot. This plan appeared to work an effectual cure; but as I have departed from it in the matter of imprisonment, I will give full particulars of my more recent mode of operating, which thus far promises the best results.

First, however, let me indorse the opinions both of Dzierson and Rothe, that except under very special circumstances it is unadvisable to attempt the cure of a foul-breeding stock; better, far better, to consign its inhabitants to the brimstone-pit, the hive itself, if a straw one, to the flames, the comb to the melting-pot, and appropriate the honey to any purpose except that of feeding bees.

Before starting it was requisite to insure the transfer of the bees to unpolluted hives, and here I found that Dzierson declares that every hive that has contained a foul-breeding colony should be exposed to the sun and air for two years before being re-stocked. In my own case this was simply impossible, and I therefore adopted the practice of another German writer on the subject—viz., to scrape out the hive very carefully, wash it all over with a saturated solution of chloride of lime, keeping it closely shut up for twenty-four hours, and then, after thoroughly washing it in clean water, exposing it to the sun and air until the smell of the disinfectant had passed off. This method has the advantage of enabling one to use a wooden hive again after the lapse of a couple of days, and is, I believe, thoroughly effectual.

Having in this manner obtained a supply of pure hives, my first step in each case is to capture the queen and secure her in a cage. This is very important, as insuring the safety of the royal person during subsequent operations as well as stopping breeding, and effectually preventing the bees from deserting the unfurnished domicile to which they are temporarily consigned. One of my colonies did, in fact, attempt to do this, but knowing that I held so important a hostage I was enabled to view their proceedings with perfect equanimity, feeling myself to be the real master of the situation, and was not a little amused to see the truants after filling the air for a long time with all the noise and bustle incident to swarming, at last sink crest-fallen back to the unfurnished mansion in which their sovereign was held a prisoner, and, confessing themselves beaten, commence comb-building therein, a thing which they had hitherto resolutely abstained from doing. The queen being, therefore, confined and placed in a clean and empty hive, all her bees are brushed from their combs into it as rapidly as possible in order to prevent

their carrying much of their infected honey with them, whilst the combs themselves are set draining out of the bees' reach and consigned as quickly as possible to the melting-pot. After the lapse of three or four days the queen (still imprisoned), and bees are again transferred to another clean hive furnished, if possible, with a few pure combs, and in this they are suffered to remain, their queen being released in the course of a day or two, or as soon as they appear contentedly settled. Let me again repeat, that all these operations, in which tainted combs must perforce be exposed to the attacks of robbers, should be performed as rapidly as possible, and either at a distance from other bees, or at least late in the evening.

Having now, as I hope, by these means restored my remaining colonies if not to a thoroughly healthy, at least to a convalescent condition, I may be permitted to take a retrospective glance at the amount of mischief which this pestilent disease has wrought in my apiary during the past season. I commenced the bee year with either sixteen or seventeen stocks, to which must be added five received from various friends for the purpose of being Ligurianised. During the spring I sent out four Italian stocks with varying ill-fortune. All the others are now merged, by divers unions (with the particulars of which I have not deemed it necessary to encumber my narrative), necessitated from time to time by their dwindling condition, into eight* stocks with pure Ligurian queens, nearly all of them reduced to the condition of recent swarms, and two queen-rearing colonies, the entire black and hybrid elements having been eliminated from my apiary. It will thus be seen that by this visitation I have sustained an actual loss of about a dozen stocks, since I am, of course, accountable to my friends for those with which they have intrusted me, besides losing the entire honey harvest, and the whole of the natural or artificial increase which would have resulted under ordinary circumstances.

Still, if the narrative of my misfortunes should be the means of directing attention to a disease not, I fear, so very uncommon among our little favourites, although almost entirely overlooked by English authors, and if, at the same time, it throw some light on the otherwise unaccountable failures related by Mr. Fairbrother and "BEE-HIVE," I shall not remain altogether inconsolable under the losses which have befallen me in my capacity of—A DEVONSHIRE BEE-KEEPER.

WEAK AND UNHEALTHY HIVES.

I HAVE perused with feelings of sympathy—mingled, let me say, also with surprise—the lamentable plaint which appeared in your Journal from its esteemed correspondent "A DEVONSHIRE BEE-KEEPER," regarding the weak and unhealthy condition of his apiary this season—sympathy on account of the worries and disappointments incident to such a state of matters: surprise, that one displaying hitherto such a heroic and undaunted spirit under the many difficulties and perplexities with which he has often been surrounded, and whose fluent pen has been ever ready to answer all the inquiries, and to solve all the doubts of the numerous parties who appealed to him for advice and information, should write in such a desponding strain. This appears to me even a greater mystery than the one which has apparently for the present overwhelmed the spirit and prostrated the energies of our friend.

You will permit me, therefore, to trespass a little on your space while I consider a few of the causes which lead to the state of matters here complained of—weakness and unhealthiness in hives, and see whether the so-called mystery may not receive an easy solution, and the evils in question be satisfactorily accounted for.

I have chosen the words "weak" and "unhealthy," which are terms pretty well understood among apirians as denoting a state or condition the reverse of prosperous, premising only that the latter word "unhealthy," does not necessarily imply the presence of the disease, properly so-called, among the bees; but is only meant to indicate the existence of some evil or defect in the hive which, as I have already said, is adverse to prosperity.

* I should now say—four stocks, one having been despatched to R—frew.

In the cases before us (for Mr. Woodbury refers to Mr. E. Fairbrother's case as one similar to his own), it is, of course, not easy in the absence of full particulars, and of a personal knowledge of all the circumstances, to speak decisively as to the cause of the deterioration and decadence of the hives in question; but judging from the facts communicated, it does not appear to me that either of the cases mentioned is beyond the reach of a true solution. I may here premise, however, that Mr. E. Fairbrother's case and Mr. Woodbury's seem to me entirely dissimilar in their origin and character. Mr. Fairbrother no doubt complained of his bees deserting and his hives gradually degenerating and dwindling away without any apparent reason; but it does not follow that because the results were somewhat similar the evils themselves were the same, or that these results were brought about by the same causes. When I read Mr. E. Fairbrother's communication I was not the least surprised at it. I did not consider it a wonderful thing that hives in certain circumstances and in certain localities should not sometimes prosper. Pray let me ask, What are the elements of prosperity? Mr. Fairbrother himself in a subsequent communication answered this question, and therefore his own case, completely when he said—First, fertility in the queen; second, good pasturage within reach; third, favourable weather. The further question then arises, Were any of these elements wanting in his case so as to account for failure? In the absence of a knowledge of circumstances I cannot of course pronounce decidedly as to the real cause or causes; but if there existed no radical defects in the hives themselves, no lurking evils within—if the hives when put down in his apiary were strong, vigorous, and healthy, and if a gradual dwindling away took place—and if on repeated trials with different stocks under like circumstances the same results ensued, then I should have no doubt in ascribing the cause of failure to locality alone. Let me tell Mr. Fairbrother, and all whom it may concern, that there are certain localities in which bees do not and cannot thrive. Woolwich may be one of these: I should fancy it is. But independently of the smoke and other nuisances incident to a town like Woolwich, bees do not like a town life. They lose themselves and are trampled upon by hundreds amid the streets and lanes of a large town. They have to travel far for food; and even when the apiary is situated in the outskirts, the bees have only access to the fields on one side of them. Within the radius of a mile they can only resort to a mere segment of a circle for supplies, while the remainder may be to them worse than barren. True, all towns are not alike, but as a general rule I should pronounce a large town locality for an apiary to be most ineligible in every sense. Should the amateur cultivator prosecute his studies in such localities, he must do so under great disadvantages and be prepared for considerable sacrifices while enjoying his pleasures. It is of little consequence for Mr. Fairbrother to inquire "How far will bees fly for food?" The real question is, "How far can bees profitably and with advantage afford to fly for food?" The nearer and more abundant the pasturage, the better will they prosper; the more distant and scarce, the reverse.

I know well experimentally what it is to combat with the disadvantages and evils of a town locality. With every fostering care and attention, the population of any of my hives is never nearly equal to such as are situated in the open country, nor do they ever approach their prosperity. If I were to choose a site for an apiary it would neither be in towns nor in the neighbourhood of towns, but in some spot far removed from the busy haunts of busy men.

Mr. Woodbury's case assumes to my mind a different aspect altogether. He has tested his locality with different results, and therefore, the same objections cannot apply here. The evils of which he complains I attribute to his own creating—they have in my opinion been brought about solely by himself. And here let me state the broad truth at once, which I challenge all to gainsay—namely, an experimental apiary can never be a thoroughly prosperous one. Let me impress this truth upon the minds of all the apirians readers of this Journal.

I have operated more than most apirians in my day, and know full well the general results and effects produced by the various operations in which I have engaged; and I will make this remark as generally applicable to all these, that

unless performed in strict accordance with the natural instincts and habits of the bees and a due regard to time, circumstances, and condition, the results will always be unsatisfactory and frequently productive of much evil.

It was reported lately in this Journal, that at a meeting of German bee-keepers the question put into the hands of the celebrated Dzierzon to support, was the following:—"Why are artificial swarms to be preferred to natural swarms?" To the credit of that great apiarian he had the boldness to declare, as a preface to his remarks, that "no man of sense will endeavour to attain by artifice what Nature gives voluntarily." We can never accomplish by any artificial process whatever anything half so well as Nature herself. Artificial swarm-making, therefore, must be performed, I hold, only in certain circumstances, and according, as far as possible, to natural laws. The further we deviate from these laws the less successful shall we be and the more direful the results.

These remarks being made, let me come to the consideration of the evils of which Mr. Woodbury complains. Mr. Woodbury's apiary has been literally an experimental apiary. For the purpose of multiplying Ligurian queens he has availed himself of the well-known power which bees possess (the discovery of Schirach), of creating queens at will; he has adopted every expedient to attain his end; he has checked and disallowed the natural swarming propensities of his bees; he has forced them into positions foreign to their natural habits and instincts; he has shifted and re-shifted colonies and portions of colonies with the produce of their labours again and again; he has transferred a few combs from this hive into that hive, and again from that hive, it may be, to another, until he has gone the whole round of his stocks. In the various manipulations consequent on all this work brood-combs will get sometimes, it may be, chilled by too long exposure to the cold air, or are unattended to and neglected by the bees by reason of the disorders and disturbances created in the hive; and once the evil is neglected, or chilled brood occurs in any hive, then farewell prosperity—there is laid the foundation of future evils, which it is scarcely possible to over-estimate. The unhatched larvae get corrupted in their cells, the bees do not seek to remove them if they can, the eggs laid in contiguous cells are affected by coming into contact with these cold putrid bodies, and remain also unhatched. The evils increase; the bees become paralysed, their industry is materially damped, an inertness and apathy seize the whole community, the queen participates in the effects, her reproductive powers are slackened—in short, the whole hive is affected, and becomes, if I may use the term, completely demoralised. Its numbers decrease, and it speedily arrives at that stage when it must be classed under the category of "weak and unhealthy;" and eventually, if the evils are not timely rectified, it will become a complete wreck. Is this the state in which Mr. Woodbury's hives are now situated? If so, is it to be wondered at? Is it a mystery which cannot be solved?

If I am right in my surmises—if I have succeeded in pointing out the causes of these evils, what shall I say as to the remedy? I should advise a total clearance of all the affected combs in each hive—nay, of the whole comb together, and the bees to be introduced into fresh combs, the produce of healthy hives to be got elsewhere, containing plenty of brood and honey, and thus the evils in question will be obviated, and the sanitary condition of his stocks will be completely restored. It is vain to attempt a restoration now in any other way. The season is too far advanced for less decided measures. The case is urgent and requires immediate action. Leave the hives as they are, and not a bee will live to see the ensuing spring.

Mr. Woodbury refers to the successful bee-keeping of many who know little or nothing of the natural history of the bee. May not this be accounted for by such individuals allowing their bees to take their free, natural, and unrestrained course in swarming, and by not tampering with their instincts and interfering with their habits, not forcing them into positions which are adverse to their well-being?

In regard to differences in the reproductive powers of queens, I at one time entertained the same views as Mr. Woodbury propounds—namely, that they are rarely at fault. A more enlarged experience, however, has convinced me that these differences exist to a large extent; and though it

is foreign to the present subject to enter into a consideration of the causes of these differences, involving, as that consideration necessarily would, a discussion on the whole question of queen-rearing and fecundation, suffice it for the present to state that these differences are considerable, both in regard to the power of oviposition and to its continuance or duration. Some queens become exhausted in one year—others hold on for several years, maintaining all along their superior prolific character.

These points, I dare say, are new to most of your apiarian readers—at least they are never mooted in the pages of this Journal—but they are facts nevertheless; and if Mr. E. Fairbrother asks, as he did ask, how to choose a prolific queen, my answer to him is, that though I am myself guided in some measure by such considerations as I have here merely hinted at, yet the safest and best course for apiarians in general to follow is to be guided by actual facts:—To preserve such queens as really prove themselves to be very fruitful, and which maintain the colonies over which they reign in a state of prosperity; and to dispense, on the first fitting opportunity, with such as prove themselves the reverse.—J. Lowe.

TRUE CAUSES OF FAILURE IN BEE-KEEPING.

THE communication from "A DEVONSHIRE BEE-KEEPER," in THE JOURNAL OF HORTICULTURE of July 21st is calculated to fill the minds of other bee-keepers with apprehension and dismay. If so great a bee-master finds his stocks dwindle away and die, in spite of the most earnest attention and the most approved plans of bringing out their capabilities, what can mere novices like myself expect but sooner or later the like failure—less signal, perhaps, but none the less disappointing? If the bee-keeper's great oracle is baffled, to whom shall we look for trustworthy guidance? Most sincerely do I, in common with many others who take an interest in apiarian pursuits, regret your able correspondent's disappointment; and most heartily do I hope, that for his own sake, as well as for the sake of those who are similarly circumstanced, he may be able to discover the true reason.

At the same time I beg to state that "A DEVONSHIRE BEE-KEEPER'S" failure might have been expected to occur sooner or later. Bees must, as I take it, be treated on other principles than those which are merely scientific. You may laugh at the notions which country people have respecting these strange creatures, and call them superstitious if you will, but to use the words of a great writer—

"There are more things in heaven and earth, Horatio,
Than are dreamt of in your philosophy."

In your Number for May 6th, 1862, an article appeared on "Bee-keeping and Customs in Cheshire." It is there stated that unless the bees are expressly informed of the circumstance of any member of the family dying, the bees, too, so it is believed, will dwindle away and die. Multitudes of examples, it is said, can be alleged by the "old dames," in proof of this idea; but is not the word of the "old dames," experienced as they are, deserving of being credited? I think it is. But in reality not merely in cases of death, but in cases of family festivity, the bees should be duly made acquainted with what is going forward. If a friend is coming to stay in your house, you should inform them, and introduce him to them at the earliest opportunity. If any joyous event takes place, such as a marriage or a christening, and you entertain a party of friends on the occasion, you should by all means make your bees partakers in the good cheer provided. If you forget them, they will probably resent the affront, and desert you. But if there is one thing more than another which is said to be "unlucky" in regard to bees, it is buying and selling them. Has not our friend, the "DEVONSHIRE BEE-KEEPER," been rather a serious offender in this respect? Can we wonder that his bees have taken it to heart and failed to cheer him with the wonted signs of their goodwill? You may lay it down as an axiom that bees if affronted will cease to prosper; they will dwindle away, and ultimately, in spite of every care, die. Of course, bees must, in all cases, be properly hived and attended to, but at the same time, if certain customs are not complied with in regard to them, I believe that the greatest amount of

attention, and the most approved hives, will not suffice to insure success.

It is notorious that the bees of one proprietor will sometimes prosper, while no care on the part of another, living possibly close by, will command an amount of success sufficient to repay him for his pains: hence it is a very common idea among cottagers all over the country, that the prosperity of bees depends as much on what they call "luck," as it does on anything. If, they would say, the "DEVONSHIRE BEE-KEEPER" is going to have a run of ill-luck with his bees—whatever may be the cause of it—do what he may, they will not prosper. My own belief is, that he will find them dwindle to that extent that he will have scarcely a bee remaining, and, therefore, I should advise him, little as I am qualified to give advice on the scientific management of bees, at once to get rid of his entire stock, and start afresh. Let him beware of offending the moral susceptibilities of his bees, English or Italian, in any way, and then, probably, he will succeed as in times past.

Probably he will treat all that I have said as "bosh," but I could not help suggesting it for his reflection. At any rate, it is plain that he has a problem to solve as difficult as any that has hitherto engaged his attention in regard to bee-keeping.—JONAS JACKSON.

[Every apiarian must agree with Jonas Jackson; and to his suggestions we will add a few more similarly sanctioned by antiquity. As Mr. Woodbury will like to strengthen his hives by the joining to them fresh swarms, therefore let him kill a bullock as directed by Virgil in his fourth Georgic, and let him add the bees engendered by its bowels to his declining stocks. Let him in future on the death of any relative tie a piece of black crape round each bee-hive, as they do, or used to do, in his own county, as well as in Gloucestershire and Cornwall. When his hives swarm in future, let him by crying "Brownie! Brownie!!" summon the tutelary fairy to his aid to prevent their going whither he would not. Never let him again part with a hive of bees for money, and when he barters one away never let him have it removed on any other day than Good Friday.—Eds.]

FAILURES IN BEE-KEEPING.

WHILST condoling, as in duty bound, with our brother of Devonshire, I would remind him of one of olden time (steadfast in his integrity when brought level with the dust from a lofty pinnacle of prosperity), of whom it is recorded that he had given to him "twice as much as he had before." No doubt your readers will all respond to the hope, and wish that the "DEVONSHIRE BEE-KEEPER" may soon be himself again, and his hives prospering even beyond the success of yore.

I should rejoice could I point out the reason why such failures take place in apiaries as our leader is now in mourning for. I know such deaths and losses are most frequent; witness the number of apiaries on every plain, once flourishing, but now exhibiting only "a beggarly account of empty benches." But I cannot. I know that certain families of the human race die out, why and wherefore it is not possible to say, and strangers almost take the name, titles, and properties of those who have been as wishful to perpetuate their line and name as the "DEVONSHIRE BEE-KEEPER" was or can be to keep up the stocks in which he prided. Equally pleased should I be could I point out the reason of the potato failure. But I cannot: I only know that worms will wither our gourds in a night. I believe all these losses and mishaps, if you will, are ordered and permitted by One who doeth all things well: therefore, I faint not when I have my share of the mischances, and I try to follow the example set me by my favourites, which always endeavour to rectify their "break-downs" as long as there is any hope left of building up again.

When I brought my bees from the north of Lincolnshire (three hives) in the winter of 1861 and 1862, I thought they were all "good standards." Two were swarms of 1861, the third an old stock that had not swarmed that year. They all began the decidedly bad bee-season of 1862 vigorously enough; but the third soon began to dwindle away, leaving money enough to have wintered two hives. Of the other two

only one just "saved its bacon" by a trip to the moors. The other swarmed twice, and I kept it at home, giving it honey without measure all the time its partner was at the heather; and now mark the result. The hive I kept at home followed suit exactly this spring with the one which died in the previous one, and the other so nearly dwindled away, that I was once on the point of "killing it to save its life." I did not do so, however, and, strange to say, it has recruited; and though it never has been full of bees in any period of this summer it has made plenty of honey, and is now one of the heavy ones of my thriving stocks. I never observed one drone issue from it all this season. I never saw one within its windows; but one night I found the front of it strewn with drones, some dead, some dying, some in all stages of infantile life. I have my idea that this hive will do no more good, and it is now doomed to the fuming-pot. In Yorkshire I had a similar case exactly. The heaviest hive I had I deprived of a portion of its honey, and the next season it dwindled away.

I could give instance after instance of the kind, both under the depriving system and on the cottage plan—first swarms, seconds, old stocks, all alike; sometimes a hive or two in an apiary, sometimes the whole lot. The simple look on and wonder, the wise are confounded, the superstitious say it betokens death, or is the consequence of it; but as I do not like to class myself with either of those denominations exactly, I say with him of my neighbouring county, we have not arrived at the solution of the mystery. I should have been almost cleaned out again last year, as I have been many a time before, had I not purchased two first swarms. Of these, one was, to all appearance, doing as well as bees could do last season, when one morning I saw that something was amiss—the bees were showing every symptom of having lost their queen, though full of brood-comb in every stage. Whilst the hubbub was at its height a neighbour had a "second cast." I was not long in looking out for a supernumerary queen. I caught one, took her home to my "distressed manufacturers," and in less than one minute after this young virgin stranger entered the hive they were working away as steadily and happily as I should wish those of Lancashire to be working, were the cotton famine at an end.

One of your correspondents asks respecting the length of time piping is heard before the issue of a swarm. I have known them do it a day or two after the first trump of defiance. This year they have piped for seven days or more. More than a fortnight elapsed between the first and second swarms in my garden. In a neighbour's, some of his hives swarmed for the third time on the seventh day. So much for rules. It would almost appear as if bees did not adhere very strictly to them. But here an ignorance of their habits may put us at fault.—THE HAMPSHIRE BEE-KEEPER.

A WHITE OUSEL.—A very interesting variety of the Ousel (Blackbird) has been shot near here; it is evidently a male bird, and is a pure white—so much so that I could not discover a single feather varying in colour. Its yellow beak added to its singularity of appearance.—W. EARLE, Digswell.

OUR LETTER BOX.

LAME CHICKENS (*A Constant Reader*).—You will find remarks on this subject in another column.

STORING HONEY—ITS USE (*J. T. Stockport*).—Store your honey in closely-covered jars, not in tins, which would communicate to it an unpleasant flavour. Virgin honey in the comb is no mean adjunct to the breakfast table, nor is it to be despised when newly drained from clean combs.

KILLING DRONES (*J. F.*).—On no account kill them. The bees will effect the slaughter when the drones are no longer required.

LONDON MARKETS.—August 3.

POULTRY.

London is fast becoming empty. Demand flags and supply increases. Prices suffer accordingly.

	s.	d.	a.	d.		s.	d.	a.	d.		
Large Fowls	2	6	to	3	0	Guinea Fowl	0	0	to	0	0
Smaller do	2	0	"	2	6	Leverets	0	0	"	0	0
Chickens	1	6	"	1	9	Rabbits	1	4	"	1	5
Geese	5	6	"	6	0	Wild do.	0	8	"	0	9
Ducklings	2	0	"	2	3	Pigeons	0	8	"	0	8

WEEKLY CALENDAR.

Day of Month Week.	AUGUST 11-17, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
11	Tu	W. Sherard died, 1728. B.	Day.	Night.	Mean	Days.	m. h.	m. h.	m. h.	m. h.	m. s.	
12	W	Grouse shooting begins.	75.3	51.8	63.8	17	40 4	30 7	39 1	33 5	27	5 1
13	Th	Hornweed flowers.	75.2	51.2	63.2	14	42 4	28 7	40 2	4 6	28	4 52
14	F	Spurges flower.	74.1	50.2	62.2	16	43 4	26 7	44 3	29 6	29	4 42
15	S	Mint flowers.	72.3	51.1	61.7	14	45 4	24 7	47 4	50 6	30	4 31
16	Sun	11 SUNDAY AFTER TRINITY.	72.8	50.1	61.5	14	46 4	22 7	54 5	9 7	1	4 20
17	M	All-heal flowers.	73.3	51.5	62.4	16	48 4	20 7	59 6	26 7	2	4 8
			73.8	50.5	61.9	19	49 4	18 7	7 8	47 7	3	3 56

From observations taken near London during the last thirty-six years, the average day temperature of the week is 73.8°, and its night temperature 50.9°. The greatest heat was 92°, on the 11th and 15th, 1842; and the lowest cold, 32°, on the 13th, 1839. The greatest fall of rain was 1.14 inch.

ARCHERFIELD EARLY MUSCAT GRAPE.



WITH regard to this I consider it right—more particularly towards the Fruit Committee of the Royal Horticultural Society—to state that, after having tested this Vine under various circumstances, the plants propagated from the original Vine do not maintain the peculiarly early character which it has exhibited for three successive years. It will, of course, be taken for granted that this will

prove a disappointment to all concerned; for the prospect of having acquired a Muscat Grape that would ripen as early as the Black Hamburg, even in Muscat heat, was one of great importance. So far as the perpetuation of the very early character of the original Vine is concerned, I am sorry to say the matter is now hopeless, and, to my mind, settled to the contrary.

I have already publicly stated the Vine was no seedling of mine, and I was in ignorance of its history. It was planted in 1860, and in 1861 was allowed to carry a few bunches; and so early was it that I several times expressed my conviction that it could not be a Muscat at all. When it ripened all doubt on this point was dispelled; and from the attention that it attracted from all who saw it ripe while the others were green, I was induced to send it to the Fruit Committee to see if they knew what it was. In 1862 the eyes that were taken from it were put in along with Black Hamburgs, Royal Muscadine, Muscats of sorts, as well as other varieties; and under precisely the same circumstances, the buds from this mysterious Vine were ready to pot-off long before any of the other varieties. Last year and this the original Vine, as many could testify, exhibited its peculiarly early properties as strikingly as ever.

There were the strongest temptations for its being distributed this year, but from the mystery which existed about its origin I was determined that not a shadow of doubt should be left as to its character before I could allow its distribution. To set the matter at rest there were a good many grafted on the old Muscat of Alexandria in a house entirely apart from the parent Vine, and one was put on the Muscat that grew next the original Vine in the same house. There were plants of it planted at Dalkeith Park gardens in a house where several other varieties of Muscats were planted of a like age, and it was grafted on other Muscats there also, all with the view of proving whether under different circumstances the early character would be perpetuated. Under these circumstances it has not proved any earlier than the earliest of the other Muscats against which it has been tested. In a late Muscat-house here, where the various sorts are now changing colour, the fruit from

the inarches of last year are no earlier than that which is borne by the other varieties planted in 1860. The original Vine never grew as strong as the others; and probably something may be discovered that has affected it, and perhaps a lesson may be learned in the early ripening of Muscats. However, it is not my present object to theorise on the matter in relation to the results produced. Meantime I am satisfied with stating the facts of the case, and will notice with interest the Vine which has hitherto been so remarkably early in its produce.

I may state that it appears under the different circumstances related above to be much more free in setting and stoning than the old Muscat of Alexandria, but not more so than the Bowood and Tynningham Muscats, while in bunch and berry it resembles the former more than the two latter. D. THOMSON, *Archerfield Gardens*.

BEDDING-OUT AT THE CRYSTAL PALACE IN 1863.

I HAVE paid two visits this season to the Crystal Palace for the express purpose of gaining as much information as I could from the bedding-out there. My first visit was at the beginning of July, and my second in the last week of that month.

Some of your readers may not be aware, or have forgotten, that Mr. Beaton stated last year in No. 82 of your Journal that some of his new seedling Geraniums would be tested this summer both at the Royal Horticultural Society's gardens and at the Crystal Palace—such as Cybister or The Tumbler, Mrs. Whitty, Crimson Minimum, and others unnamed. As I had heard, also, that there were to be several new things, or, rather, old things revived, but which to me were new, on my first visit I was glad to have the aid of Mr. Page and Mr. Vyse, the superintendents of the Rose Mount and the upper terraces. I was afterwards fortunate in meeting Mr. Gordon, who was kind enough to verify some of my notes upon his bedding-out, and who also showed me a new Lobelia of his own raising, which for size of flower and colour beats our old Lobelia speciosa hollow.

In order to enable you to follow me to the different beds I must beg you particularly to notice that I begin with the first round bed facing the entrance to the gardens from the railway station.

Suppose you have given your entrance-fee, and are standing on the top step of the doorway directly facing the Rose Mount, your eye is caught immediately by a lovely coronet of pink, scarlet, white, yellow, and blue, which forms the decoration round the upper part of the Rose Mount. Bring your eye down to the base of the Mount to the walk which goes round; directly facing you is a path leading up to the top of the Mount, and it is to a bed on the left-hand side of this path, but on the right of the walk going round the Mount, supposing in your course of inspection the Mount is on your right, that I wish first to direct your attention. It is a round

bed planted with *Sidonia* for centre, one lovely mass of pink; then one circle of *Harry Hieover*, the outer circle being *Lobelia Partoniana*: this bed strikes me as one of the most perfect in the gardens. Some, perhaps, would prefer a rather broader circle of *Harry Hieover*, but you must remember *Harry* is a new comer, and his progeny are not as yet very numerous. *Sidonia* is a *Geranium* which I am surprised is not more used. For bloom it far surpasses *Christine*; but it is rather difficult to get up a stock of, and must be planted very close; old plants are also the best. There are several of the based in the market, but this is the true one. Remember, this *Sidonia*-bed is our starting-point. Now if you will be kind enough to take your way as if going up to the Palace by the walk round the Mount (thus the Mount will be on your right), you will come to another round bed planted with *Tropaeolum elegans* and *Golden Chain* round—a bold stroke, orange and yellow! but forming a very good contrast to the first—viz., the *Sidonia*, and to the next. This is planted with another new *Geranium*—*Baron Ricasoli*, as a centre, a circle of two rows of *Christine*, a circle of one row of old *Floribunda Geranium*, the outer circle or edging being *Lobelia speciosa*. The *Baron* is much the same colour as *Harkaway*, but brighter and with much larger petals and truss, and a far more abundant bloomer: it has a slight horseshoe on the leaf. The old *Floribunda* is a friend of my youth. I remember a ladder plant of it 2 or 3 feet high, which annually decorated our nursery window. It propagates easily, and, if the old blooms are picked off, flowers well during the whole summer; but if you will take my advice, use it only as an inner circle or centre and not as an edging, as when the white petals drop off they make a sad litter.

We now come to another path leading up the Rose Mount. At the corner formed by this and the walk going round, is a heart-shaped bed, with a centre of *Trentham Rose* and *Aurea floribunda Calceolaria* as an edging. Turn now up the walk leading to the top of the Rose Mount; and next the heart-shaped bed at the corner, on your right going up, is a very charming bed. I call this a salad-bed, for it has the same kind of fresh cool appearance. It would form a very good neutral tint to bring in between stronger combinations of colour. It is planted with alternate circles of *Lobelia Gordoniana*, and *Alma Geranium*. Up again two or three steps, and still looking to the right, you have a bed of dark maroon *Calceolaria* (seedlings of Mr. Gordon's, very beautiful at my first visit, but fallen off on my second, owing, no doubt, to the excessively hot sunny weather), with an edging of crimson *Ivy*, far too narrow, and not the right colour to put next to the *Calceolaria*. And now turn back again and go down the walk, and you come to another salad-bed on the right, opposite the other, planted with *Julia* variegated *Geranium*, and *Lobelia Partoniana*. This *Julia* was brought out by Turner or Kinghorn, and, as you will probably notice, is superior to *Alma*. At the corner opposite No. 1 heart-shaped bed, is a round bed, centre *Prince of Orange Calceolaria*, with an edging of *Harkaway*.

Now, you are again in the walk going round the Mount, and at the next bed you exclaim, "Oh, how dull-looking!" It is an attempt to make the *Fuchsia* useful as a bedding plant, and is planted with *Fuchsia Queen of Hanover* for centre, two circles of *Empress Eugénie Verbena*, one circle *Fuchsia Globosa*, edging a white *Lobelia*.

We now come to No. 2 heart-shaped bed, planted with *Crystal Palace Scarlet Geranium*, with an edging of *Flower of the Day*. Continuing your course you come to a large bed planted with *Rhododendrons*, and next to No. 3 heart-shape, with a centre of *Purple Nosegay*, bordered with a hybrid *Geranium* called *Lady Mary Fox* and edged with *Tropaeolum Elegans*. Close to this No. 3 is a tree with a seat under, and a walk runs up the Rose Mount. Up this walk I shall not take you, as there is nothing particular to notice, the beds on both sides being made up of mixtures of small variegated *Geraniums* and *Verbenas*, which last have failed. You may, perhaps, notice the edging of the first round bed on the right of the walk. It is *Golden Ivy-leaf Geranium*. The round bed at the corner is filled with *Tropaeolum Ball of Fire*.

Proceed now along the circumference-walk, always keeping the Mount on your right, and you come to a round bed filled with *Gazania splendens*, mixed with *Cerastium*

Biebersteinii, edged with *Cerastium tomentosum*. The next is a very bright bed, centre *Brilliant Geranium*, edged with *Agathaea coelestis variegata*. Then, there is another attempt with *Fuchsias*. We now come to No. 4 heart-shape bed, centre *Punch* four rows, encircled by two rows of *Gaines' Yellow Calceolaria*, two of *Christine*, the whole edged with *Purple King Verbena*—a very effective bed. Now, turn up the walk to the top of Rose Mount, and on your right you have a bed centred with one of the new *Nosegays* of much the same colour as *Trentham Rose*, a capital bloomer, edged with *Blush Minimum Geranium*. The next bed is variegated *Geranium Bijou*, mixed with *Eyebright Verbena*, edged with *Lobelia Gordoniana*.

Turn down again, and with your back to the Rose Mount, you have on your right a bright rosy-coloured *Verbena*, a new seedling edged with *Shottesham Pet Geranium*. Now you come to my pet bedding *Geranium*, *Lord Palmerston*, for centre, with an edging of *Blush Minimum*. *Lord Palmerston* is equal in truss to *Stella*, but of a more crimson colour. I measured some of the petals, they were 1½ inch in length, and you will find it difficult to count the buds on a truss. The next bed is filled with a dull-looking double *Tropaeolum*, edged with *Gnaphalium lanatum*. You are again in the circumference-walk; continue along it passing two or three round beds, one of which is *Roses*, till you come to No. 5 heart-shape, centre *Cottage Maid*, surrounded by *Christine*, edged with *Gnaphalium lanatum*.

Then comes another walk leading up the Mount, up which it is not worth while to go. Opposite to No. 5 is another bed of Mr. Gordon's dark *Calceolaria*, edged with variegated *Crimson Minimum Geranium*. Pass along the circumference-walk, and the first bed is *Queen of Hanover Fuchsia*, edged with *Cuphea*; next bed is *Gazania splendens*, edged with *Arctotis reptans*, a new edging plant; next, a bed of *Heliotrope* mixed with *Verbena venosa*; and next, *Rollisson's Unique Geranium* edged with a seedling white *Verbena*.

We now come to the sixth heart-shape bed, *Trentham Rose* as a centre, round which is *Aurea floribunda Calceolaria* two rows, edged with *Purple King Verbena*. Now up the Rose Mount, and the first bed on your right is, centre *Eyebright Verbena*, edged with *Lobelia Partoniana*. The next is a very pretty bed made up of *Lady Plymouth* variegated *Geranium*, mixed with *Melindres Verbena*, and edged with *Cloth of Gold Geranium*. On the other side of the walk going down again, you have on your right a counterpart to the last in a bed filled with *Dandy Geranium* mixed with *Verbena Hendersoni*, and edged with *Cloth of Gold*; then a bed with a rosy-crimson *Verbena* not named, edged with *Lobelia Partoniana*; and the round bed at the corner is *Tropaeolum elegans*, edged with *Gnaphalium lanatum*.

And now along the circumference-walk and you have a splendid bed of *Brilliant Geranium*, edged with *Golden Ivy-leaf*. The next bed is of a dull-coloured *Petunia*, edged with *Nierembergia*. Then a bed of *Calceolaria Prince of Orange*, edged with *Golden Chain*; and the last, *Gaines' Yellow Calceolaria*, edged with *Floribunda Geranium*.

You are now at No. 7 heart-shape bed, just opposite the entrance from the railway station. It is planted with *Cottage Maid* for centre, surrounded by *Crystal Palace Scarlet Geranium*, edged with *Flower of the Day*.

We have now completed our circuit of the Rose Mount, and you had better proceed up the walk next to No. 7. On your right is *Trentham Rose* for centre, a circle of *Christine*, and an edging of *Purple King*. On your left going up is another of Mr. Beaton's seedling *Geraniums* of dwarf habit and an abundant bloomer. Mr. Page did not know the name, and only Mr. Gordon is in the secret as to the numbers. On the left again going up is a new *Tropaeolum* of a dark maroon tint, a seedling of Mr. Gordon's.

And now we are on the Rose Mount. It is planted in festoons. First, a centre of *Christine*, festooned with two rows of *Crystal Palace Scarlet*, one row of *Gaines' Yellow Calceolaria*, one row of *Aurea floribunda Calceolaria* as of dwarf habit, then two rows of *Flower of the Day*; the angles formed by the festoons being *Lobelia Partoniana*; the whole edged with two rows of *Lobelia speciosa*. This is one of the most showy examples of bedding-out you will see anywhere. Unfortunately *Christine* seeds too freely this dry season; but we shall have *Helen Lindsay* next year, which they say has not the same bad habit.

The six sunk beds on the top of the Mount inside the Arcades are planted in opposite pairs. The first is, centre Cottage Maid, two rows of Christine round one row of Baron Hugel, edged with *Gnaphalium lanatum*. The second pair is, centre *Eclipse Calceolaria*, two rows of Trentham Rose round two rows of Crystal Palace Scarlet, edged with *Alyssum*. The third pair, Gaines' Yellow *Calceolaria* for centre, two rows of Cerise Unique Geranium round two rows of Brilliant Geranium, and edged with *Cerastium tomentosum*.

The four beds round the flagstaff are, centre Cottage Maid shaded off by a circle of Trentham Rose, again shaded off by a circle of Christine, a circle of Alma Geranium, the whole edged with *Lobelia speciosa*.

So much for the Rose Mount. It has taken some time to go round, and you have seen several beds which are not satisfactory, especially where *Verbenas* or *Fuchsias* are used, but the general effect is very bright and gay.

The next beds for you to notice are those on each side of the grand central walk to the Palace. These are very striking, especially as you look down upon them from the terrace above. On the upper side of the steps leading up to this central walk the oblongs are planted with Gaines' Yellow *Calceolaria* for central stripe, two rows of Crystal Palace Scarlet on each side, two rows of Purple King *Verbena*, edged all round with Mangles' Variegated Geranium. The round beds are—centre Trentham Rose, a circle of Prince of Orange *Calceolaria*, edged with *Tropaeolum elegans*. On the lower side of the steps the oblongs have for central stripe *Calceolaria amplexicaulis*, two rows of Cerise Unique, a stripe of Purple King *Verbena*, and Mangles' Variegated Geranium all round. The round beds are the same as those above.

Mount now to the grand terrace. The main central walk leading to the Palace cuts the grand terrace in half. At each end of the terrace are the sunk panels. We will begin with that at the west end. This, as well as the other to the east, are planted alike. The two circular ends of the four corner beds have for centre *Amplexicaulis Calceolaria*, with a circle of Trentham Rose, while the main part of the bed between the circular ends is planted with Cottage Maid Geranium, and an edging of Flower of the Day goes all round. The long beds of the chain pattern have for centre Crystal Palace Scarlet; the round have Christine for centre; while Gaines' Yellow *Calceolaria*, edged with *Alyssum*, forms a continuous chain round both. And now supposing we are at the west end of the grand terrace, we will take our course towards the east. On your left hand, therefore, you have a series of round and oblong beds. The oblong are filled with *Rhododendrons*, edged with dwarf China Roses. The round beds here, as well as in the corresponding set at the east end, have several fresh introductions for trial and criticism.

The first round bed should especially be noticed, as there are three new plants. The centre is the *Amaranthus melancholicus* ruber, a native of Japan, introduced last year by Mr. Veitch, and now used for the first time here. It requires peculiar management, or you will fail with it. Sow in heat not later than the end of January. Directly the plants are up place them in a cold frame, excluding frost. When the rough leaves appear pot singly into 48-pots, keep in a cold frame, gradually hardening-off till planting-out time, and do not be in too great a hurry for that. Till then beware of cold winds and hot sun, and when the pots are full of roots do not let them want for water. At the end of all your other bedding-out, plant your *Amaranthus*. It is one of the best of the new variegated plants for bedding, and in a mass with the sun shining beyond nothing can excel it.

Round the *Amaranthus* is St. Clair Geranium, and round St. Clair a new one of Beaton's, Black Dwarf, very effective, and a decided acquisition; the edging is Cloth of Gold. There was, and is still, a prejudice against Cloth of Gold. People said it looked unhealthy, but it is gradually gaining favour, and when its constitution has recovered its tone from forcing for propagation, it will supersede Golden Chain. It is very easily propagated from leaves. No. 2 round bed—centre, a seedling of Mr. Gordon's, like Christine, but hardly so good; a circle of Madame Vaucher growing dwarf and blooming well this dry season; edging *Lobelia Paxtoniana*. No. 3 round bed—the centre is Beaton's Magenta No. 2, a great improvement on the first of that name; a circle of *Amar-*

anthus, surrounded by *Centaurea gymnocarpa*; edging *Lobelia speciosa*. No. 4, the centre is *Centaurea gymnocarpa*, *Coleus Verschaffelti* next, *Quercifolium floribundum* and Cloth of Gold for edging, the *Coleus* gradually becoming like a piece of dirty flannel. No. 5, the centre another of Beaton's new Nosegays, *Amaranthus*, *Centaurea candidissima*, and *Lobelia speciosa* edging.

We come now to the oblong beds on the left-hand side looking east of the half-circle walk, which is intersected by the grand central walk up to the Palace. No. 1 is Countess of Ellesmere *Petunia* in a mass, edged with Golden Chain and *Lobelia Paxtoniana*. No. 2 is a seedling *Tropaeolum* of Mr. Gordon's, of a yellow colour, but with blood-red spots, which may lead to our having some day a red *Tropaeolum*; edging Alma Geranium and *Lobelia Paxtoniana*. No. 3 is a central mass of Geranium *Candidissimum*, very much like Madame Vaucher, edged with Golden Chain and *Lobelia Paxtoniana*. This edging is repeated alternately with Alma for the remainder of this set of beds. No. 4, central mass, dark orange *Calceolaria* seedlings. No. 5, centre *Tropaeolum elegans*. No. 6, Prince of Orange *Calceolaria*. No. 7, centre Comte de Morry Geranium, a new one of the horseshoe race, and very good.

The circular beds surrounding the pedestals of vases and statues are planted alternately. First, for central circle three rows of Trentham Rose, one row of Christine each side, and Flower of the Day for inner and outer edging. Second, for central circle three rows of Christine, one row of Crystal Palace Scarlet each side; edging same as the first. Mrs. Whitty, which some say is to supplant Christine as a pink bedder, is planted in the first oblong bed after you have crossed the grand central approach to the Palace, supposing you are still going east and along the great half-circular walk. The dry season has had the same effect on it as on Christine—the flowering of both is spoilt by their seeding. Then we have another mass of dark seedling *Calceolarias*, and then a bed of Lord Palmerston Geranium, which for size of truss and petal and glow of colour is not yet beaten.

A bed of *Verbena Great Eastern*, and one or two others, and you are now on the grand terrace. Standing with your back to the Palace, on your right are a series of round and oblong beds; the round with mop-headed *Acacias*, standard *Rhododendrons*, and two miserable-looking Cedars, which had much better be removed and planted in the middle. The oblongs have a stripe of Crystal Palace Scarlet for centre, on each side a double row of Christine, and Purple King all round. The round beds are a mass in beautiful bloom and health, notwithstanding the trees, of *Aurea floribunda Calceolaria* edged with Flower of the Day.

Continuing your walk eastwards along the grand terrace you have a set of round beds alternately with *Rhododendrons*, almost repetitions of those at the west, except the last of all, which is worth your inspection. It has for centre, *Amaranthus*, then a circle of St. Clair, surrounded by a new Geranium of Italian origin, I was told, called Lucien Tisserand—a perfect beauty; the edging is Cloth of Gold.

At the Crystal Palace, as at many other places, the season of 1863 is looked upon as a bad one for bedding plants. Contrasting with the two previous, which were noted for continual wet, this has been the driest known for years. Bitter cold nights have also left their marks on our flower-beds.

The new bedding plants for the year which have proved themselves acquisitions are the various Nosegay Geraniums raised by Mr. Beaton, among which, as named, are Lord Palmerston, Black Dwarf, and Magenta No. 2, not forgetting the Golden Ivy-leaf and Lucien Tisserand. The *Amaranthus*, as Mr. Robson predicted, is a great acquisition, and *Centaurea candidissima*, so far, is likewise a gain; but *Coleus Verschaffelti* is sentenced to perpetual imprisonment in the greenhouse.

F. W. ADEY, *The Cell, Dunstable.*

DISEASE IN THE GLADIOLUS.—In many of the largest collections of *Gladiolus* round London a disease has made its appearance, which is affecting the plant very much in the same way as the Potato disease has attacked the Potato for some years past. The leaves gradually lose colour and die-off as if the growth were over and the roots matured, and all this without the flower-spike having ap-

peared. We shall be glad to hear how far the collections in the country have been affected, and if any remedy has been discovered to arrest this threatened calamity to one of our most ornamental autumnal flowers.

KEW GARDENS.—AUGUST 1.

"Hast thou e'er seen a garden clad
In all the robes that Eden had?
Or vale o'erspread with streams and trees,
A paradise of mysteries?
Plains, with green hills adorning them
Like jewels in a diadem?"

THE entrance gates from Kew Green are worthy of notice. The piers are of Portland stone, with moulded and sunk panels. Those of the large piers contain elaborately carved falls of flowers and fruit. The frieze is also enriched with swags of flowers, &c., festooning on each of the four sides from rams' heads projecting boldly from the angles; and the cornice is surmounted by a richly carved vase containing a bouquet of flowers.

To the right upon entering is the Grecian conservatory; but as my object is to describe the summer tenants of the beds, I will hurry to the first turning on the left, and at once emerge upon the broad walk, on both sides of which are ranged the beds on grass. The first pair, one at each side, is a circle planted with Brilliant Geranium, edged with *Koniga maritima variegata*, more commonly known as Sweet Alyssum. The opposite bed is planted with the same to match. 2nd, Oblong bed, *Calceolaria amplexicaulis*, edged with Purple King; the opposite to match. To obviate repetition it is to be understood that every bed to be described has an opposite bed of the same to match. 3rd, A circle planted with the same as first. 4th, Oblong centre, Purple King Verbena, then *Tropæolum elegans*, edged with *Cerastium tomentosum*. 5th, Circle, *Koniga maritima variegata*, edged with *Lobelia speciosa*. 6th, Oblong, Punch Geranium, edged with *Gnaphalium lanatum*. 7th, Circle, the same as 5th. 8th, Oblong, standard and dwarf Roses. 9th, Circle, Purple King Verbena, edged with *Tropæolum elegans*. 10th, Oblong, centre *Ageratum mexicanum*, then *Cerise Unique Geranium*, edged with Purple King Verbena. An incident occurred here: As a respectably-dressed party was passing, one of them stopped to inquire of another companion the name of the *Ageratum mexicanum*. The young lady, with the air of the knowledge of a professor of botany, told him, without the least hesitation, that it was a *Heliotrope*! The authorities at Kew and elsewhere give the public more credit for their knowledge of the names of plants than they deserve, and therefore it may be well to suggest here the advisableness of attaching the names to the bedded-out plants. 11th, Circle, the same as No. 9. 12th, Oblong, centre *Calceolaria amplexicaulis*, then *Perilla nankinensis*, edged with *Centaurea candidissima*. 13th, Circle, centre *Koniga maritima variegata*, then *Gazania splendens*, edged with *Lobelia speciosa*. 14th, Oblong, Lord Raglan Verbena, edged with *Cerastium tomentosum*. 15th, Circle, the same as No. 13. 16th, Oblong, standard and dwarf Roses and Mignonette. 17th, Circle, scarlet Geranium, edged with *Stachys lanata*. A broad walk branches off with two pairs of beds at each side; the first, an oblong, centre three rows of Flower of the Day Geranium, then three rows of Brilliant Geranium, edged with Purple King Verbena; the second, a circle, Dahlia Purple Zelinda, edged with yellow *Calceolaria*. 20th, Circle on the main walk, the same as No. 17. 21st, Oblong, standard and dwarf Roses. 22nd, Circle, centre *Koniga*, then *Gazania splendens*, edged with *Lobelia speciosa*. 23rd, Oblong, Lord Raglan Verbena, edged with *Cerastium tomentosum*. 24th, Circle, the same as No. 22. 25th, Oblong, centre three rows of *Calceolaria amplexicaulis*, then two rows of *Perilla nankinensis*, edged with *Gazania splendens*. 26th, Circle, Purple King Verbena, edged with *Tropæolum*. 27th, Oblong, centre three rows of *Ageratum mexicanum*, then two rows of *Cerise Unique Geranium*, edged with two rows of Flower of the Day. 28th, Circle, the same as 26. 29th, Oblong, standard and dwarf Roses. 30th, Circle, centre *Koniga maritima variegata*, then *Gazania splendens*, edged with *Lobelia speciosa*. 31st, Oblong, Punch Geranium, old plants pegged down, edged with *Gnaphalium lanatum*. 32nd, Circle, the same as 30. 33rd,

Oblong, centre Purple King Verbena, then scarlet *Tropæolum*, edged with *Cerastium*. 34th, Circle, Brilliant Geranium, edged with *Koniga maritima*. 35th, Oblong, *Calceolaria Aurea floribunda* and *amplexicaulis*, edged with Purple King Verbena. 36th, Circle, the same as 34.

In front is a large circle. It is 36 feet in diameter, has a rich, massive, and moulded edging of terra cotta 15 or 18 inches high. The bed is raised up as a pyramid, and in the centre is a very handsome flower-vase with pedestal and plinth. The planting of the bed reaches up to the very plinth. The centre is planted with scarlet *Geraniums* interspersed with *Perilla*, then *Centaurea candidissima*, then Purple King Verbena, the whole edged with Tom Thumb Geranium. The vase in the centre is filled with scarlet *Geraniums*. Beside the walk to the left is a bed of some length, to correspond with the sweep of the walk. The centre is filled with Flower of the Day Geranium divided into compartments, being crossed with *Perilla*; the sides are filled up with *Tropæolum*, edged with *Koniga* and blue *Lobelia*.

On the right to the Palm-house the first is a circle, centre Purple King Verbena, then Prince of Orange Geranium, edged with *Arabis lucida variegata*. 2nd, Oblong, centre *Calceolaria amplexicaulis*, then Brilliant Geranium, edged with *Gnaphalium lanatum*. 3rd, Circle, the same as No. 1. 4th, Circle, *Ageratum*, edged with *Tropæolum*. 5th, Half-circle, *Perilla*, edged with scarlet Geranium. 6th, Circle, the same as No. 4.

We now take up our position on the centre of the terrace in front of the Palm-house, overlooking the terrace garden. Two vases stand in front, and other vases at the head of the lake are all filled with scarlet *Geraniums*. The two large circular beds in the middle compartment are divided into eight parts by rows of *Perilla*, two being filled with *Calceolaria amplexicaulis*, four with Purple King Verbena, and two with scarlet *Geraniums* in opposite beds.

On each side of the oblongs, in the centre, is a gorgeous pattern—the centre bed planted with Christine Geranium, then *Koniga maritima*, then Dandy variegated Geranium, with *Koniga* edging. Then the figure like a bishop's crosier is planted near the handle with Purple King Verbena, then *Aurea floribunda Calceolaria*, finishing at the top with *C. amplexicaulis*, edged with blue *Lobelia*. Then a pentagon figure is planted with Lord Raglan Verbena, with the opposite bed of the same to match. The long beds north and south of the figure are composed of Brilliant Geranium, edged with Flower of the Day. The saddle-shaped beds east and west of the figure are planted with Nosegay Geranium and *Perilla*. The four corner beds at the angles are planted with Tom Thumb Geranium. The triangle beds in front of these are planted with *Koniga maritima variegata*; and the circle at each end with Golden Chain Geranium, edged with *Lobelia speciosa*. The other half of the terrace garden is a duplicate of the above.

On the south front of the Palm-house is a broad walk with chain borders on grass. 1st, A Yew tree in a circle filled up with *Tropæolum elegans*. 2nd length, Purple King Verbena, edged with *Koniga*. 3rd, An oblong with *Perilla* in centre, then a row of Punch Geranium, and then a row of Tom Thumb Geranium, edged with *Koniga*; and so with the other beds and circles, each bed furnished with some one of the Holly trees of different-coloured foliage. On the left is a high grass mound, having in the centre an *Araucaria imbricata* encircled at some distance with two half-moon-shaped beds planted with *Calceolaria amplexicaulis* and *C. Aurea floribunda*, edged with *Koniga* and blue *Lobelia*, and on the inner or concave side with a row of Brilliant Geranium edged with *Perilla*. Beside the half-circular walks are oblong beds, some with Hollyhocks in the centre edged with Ribbon Grass, others with *Canna indica* edged with Ribbon Grass; some with Dahlias edged with *Calceolaria Aurea floribunda*, others with Fuchsias edged with *Perilla*, &c.

From the botanic department to the new conservatory is a broad grass ride, planted on one side with standard moped-headed Robinias—unsightly objects, liable to serious damage from high winds.

On the right after entering the pleasure ground is the Pantheon built by Sir Jeffry Wyattville. Its base is elevated; the entablature is supported by four columns, and bears the

initials "W. R. IV., 1837." To the south front is a Rose garden furnished with *Aimée Vibert*, *Général Jacqueminot*, *Souvenir de Malmaison*, *La Reine*, *White Moss*, some sporting with stripes of pink; *Gloire de Dijon*, and *Devoniensis*. Tea Roses in all parts look rather indifferent, which should induce the authorities to adopt Mr. Beaton's oft-repeated suggestion of removing them altogether from the oblong beds in the main walk.

Across to the new conservatory is only a few minutes' walk. It is a substantially built and splendid erection. The two wings have been added to it since Mr. Beaton's report of the place last year. The *Araucarias excelsa* and the other large specimens, for the protection of which this crystal palace was erected, are now finally planted out in a compost of loam, peat, and leaf mould. The ventilation is all that could be wished. The roof is so constructed with wheel-and-rack machinery, that one-half can slide down over the rest, so as to allow of the free admission of genial showers of rain. On the space from the great Palm-house to the Victoria-house we passed oblong beds on the grass planted with *Purple Zelinda Dahlias*, edged with *Ribbon Grass*: circles with *French Marigolds*, edged with *Purple Orach*, *Mangles' Variegated Geranium*, *Verbenas*, of various sorts, *Cupheas*, &c. Each circle was adorned with a standard Rose in the centre.

In front of the Cactus-house going eastward are two long beds each 53 yards long and 6 wide, divided at one side by a fine tree (*Negundo fraxinifolium*), throwing its wide-spreading shade over a rustic seat. The beds are planted in panels, diamond-shape, with large dots of *Perilla* in centre, next *Calceolaria amplexicaulis* and *C. Aurea floribunda*, then *Tom Thumb Geranium*, edged with *Koniga*. They are splendid beds.

Although it is usual for every one to suggest improvements according to his taste or fancy, I will waive my privilege on this occasion, well knowing the difficulty of getting up stock and arranging it with taste in every minute part of an extensive place like Kew, where the visitor may wander over scenes, where, but a few years since, a wild uncultivated waste held its sway, until the genius of the place

"Stretch'd o'er the marshy vale yon willowy mound,
Where shines the lake amid the tufted ground,
Raised the young woodland, smooth'd the wavy green,
And gave to Beauty all the quiet scene."

—W. KEANE.

KNOWLEDGE DESIRABLE FOR GARDENERS.

(Concluded from page 66.)

IN our last we finished with the importance of reading as a means of obtaining information, and of writing correctly as a guide for testing our knowledge, and one of the channels by which we can make our knowledge available for the benefit of others. The third essential element is Arithmetic, or a knowledge of the science of numbers. It would be well if all lads, before they enter a garden, could be well grounded in this respect. It would save them much mental labour or much mortification afterwards. We have met with otherwise bright youths who could not count above a certain number, and whose calculations, even of simple sums, had to be done by the fingers instead of by the pencil or the pen. We have also met with many who in reading, when they came to figures of any length, had to pass them over or read them just as they stood, without having the least idea of their value. The principles of notation and numeration should not, therefore, be omitted, as necessary preparations to the understanding of arithmetic.

Almost every civilised nation had its respective mode of notation. Amongst us few systems are now seen, except the Roman, which is used for dates, and by which all sums may be expressed by seven characters, as I, one; V, five; X, ten; L, fifty; C, a hundred; D, five hundred; M, one thousand. There are many varieties of this mode, chiefly by reversing the C, but into this we need not enter, as such a clumsy mode of computation, even at its best, can bear no comparison with the unique simplicity of the Arabic numerals, going from 1 to 9, and the ciphers added, by which all sums can be easily read and their value computed. The cipher of itself signifies nothing—it obtains a value by the

figure that precedes it. Every other figure represents merely of itself, from 1 up to 9, the value or quantity of a certain thing. The value of figures or units in a line will depend on their numbers, and their value is thus calculated: The first figure on the right-hand represents 0, or units up to nine, the second figure so many tens, the third so many hundreds, the fourth so many thousands, the fifth so many tens of thousands, the sixth so many hundreds of thousands, the seventh so many millions, the eighth so many tens of millions, the ninth so many hundreds of millions, the tenth so many thousands of millions, and so on to billions and trillions, of which our finite minds can form no clear conception. If in long lines of figures they will be the more easily read if, beginning at the right-hand, every third figure is marked off (,) as in the following:—

1,	2	3	4,	5	6	7,	8	9	0
Thousands of millions	Hundreds of millions	Tens of millions	Millions	Hundreds of thousands	Tens of thousands	Thousands	Hundreds	Tens	Units

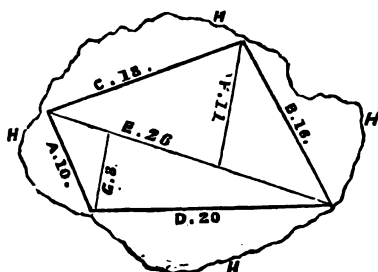
The figures will read thus—one thousand two hundred and thirty-four millions, five hundred and sixty-seven thousand, eight hundred and ninety.

Independently of the pleasure of reading the sum of a line of figures as easily as print, and not boggling at them, as many young people even in this enlightened age still do, the clear perception of their value, so as to place units under units, tens under tens, &c., is essential to the working-out the simplest problems in addition and subtraction, which may be considered the great rules of arithmetic, multiplication being just another form of addition, and division another form of subtraction. These matters are, however, better explained in the simplest elementary school-books than we could hope to do without taking up too much space; and after a few lessons in addition, subtraction, multiplication, and division, simple and compound, those who have the taste may well go as far as they like by private study. We have known several first-rate arithmeticians among our brother gardeners, who never got beyond the first four rules at school. They learned little more than that two and two make four, that take two from two and nothing remains, that twice two make four, and two divided by two leaves nothing over. Next to these four rules, the most essential for the young gardener to study are the rules of simple and double proportion, vulgar and decimal fractions, and the extraction of the square and cube roots, so as to measure easily all surfaces and solids.

In connection with this subject, it would be desirable to study geometry and mathematics so far as to be able to make plans of gardens, and the structures generally contained in them; and if the gardener has to superintend the erection of such, he should be able to estimate quantities required, and to measure all kinds of work according to the rules that obtain in various trades. In most works on such subjects there are regular rules for computing bricklayers', painters', glaziers', carpenters' work, &c.; but unless in moving earth, measuring trees, &c., which must be calculated by the solid (the width, length, and thickness being multiplied together), the great proportion of measurements will be merely the surface—that is, length and breadth, which if multiplied together will give the area. For measuring heights and distances, and doing much in the way of land-surveying, an acquaintance with logarithms and trigonometry will be a very great advantage; but in these days of the division of labour, the gardener who makes himself fit to be a land-surveyor had better stick to that, and give up Cabbage-growing.

Mere land-measuring, such as measuring the contents of a garden or a field, will be what most commonly will come in his way; and that will just be as simply the measuring of a surface as the measuring of the top of the table on which you take your breakfast. Of all oblongs or squares, length and breadth multiplied together give the area. In triangles, right-angled, the base and half the perpendicular multiplied together give the area. In irregular gardens or fields, with

no two sides and no two ends alike, and yet not a vast difference between them; we take the average of the ends and of the sides, and multiply them together. Thus A, B, C, D, is an irregular field of four sides, A 10, B 16, C 18, D 20. Add A and B together, which would be 26, the half or average of



which is 13. Then add C and D together, which makes 38, half of which is 19, multiply 19 and 13 together, and you have 247 for the area. A truer method, if there is much difference in the opposite sides, and one which often involves less trouble, as it saves going round all the sides, is to take the diagonal line across, E, 26, and then the two perpendiculars, F and G, 11 and 8 respectively, which added together make 19, the half of which is 9½, which multiplied by 26 gives the same sum of 247 as the area or measurement of the surface enclosed by the four outside lines. Did the field or park have a boundary, as that marked by H H H H, it is most likely we would use one of the two modes referred to for measuring the bulk or centre, and we would throw the outside into triangles, squares, or oblongs, regular or irregular, and add their contents to the centre. Straight-lined gardens and fields will ever have an advantage as respects utility, though they be less picturesque in consequence.

We have said nothing of the instruments, chains, flagstaves, level-boards, theodolite, &c., necessary for work on a great scale; we merely wish to indicate what would be desirable, and what a man fond of figures and practice will readily master. For the same reason we have said nothing of the mode of measuring balls, circles, and other figures, because the student will find all this in the work he studies. We have introduced the above notice on land-measuring because lately we could scarcely convince a youth that an oblong garden must be measured exactly as he would the surface of a deal board—by its length and breadth.

In the few times we have had the privilege to listen to the examination of even one of our good common national or British schools, nothing surprised us more than the readiness of the scholars in mental computation, and that in difficult sums too. In such matters the schools of the present day are immeasurably superior to those of our boyhood. We can well recollect, when in the rule of three, of a whole class of us being nonplussed by the problem, "A herring and a half for three-halfpence, how many will be got for elevenpence?" Long before any of us had slated it down, a little fellow, who that day had for the first time emerged from petticoats, sung out the answer, "Eleven, sir;" and though he did not shine with the slate or the pen with figures even afterwards, he was always distinguished by the almost instinctive quickness with which he could solve even a difficult problem, merely by mental computation. The slate or the pen was quite a hindrance to him. Our young friends will find it no loss to keep up such a habit if they have obtained it, and an advantage to get it if they do not now possess it. There will be plenty of room for it in the work of every day.

In addition to the ability of taking simple plans of gardens, houses, &c., the ambitious young man will do well to cultivate and become familiar with the principles of isometric and perspective drawing. We have known some men get easily to the top of their profession, because when their employers did not know what they meant as to proposed plans, they would render all clear in a few minutes by means of a pencil and a pocket notebook. We can well imagine such a man as Mr. Robson drawing an excellent plan whilst we were writing a page. Those who have the slightest natural taste for drawing in any style should cultivate it assiduously. The late Mr. Loudon used to say that nothing would be more pleasant or agreeable, or practically useful.

Many were the advices he gave to young men to be always at it, whether it was a tool, a house, a plant, or a tree. For ourselves we never could draw a tree, we always made a muddle of it. This, perhaps, makes us think more of the man or boy who does so nicely.

We recollect the late Mr. Joseph Knight telling us that his first introduction to one of his favourite gardeners was in this wise: He called at the Exotic Nursery, where Mr. Veitch now is, and, like many more, had been knocked about a good deal, and was rather out at the elbows. Mr. Knight at that time was anxious to improve the mental training of gardeners, and drawing was one of the matters he deemed of importance. The stray waif was taken on, chiefly because there was nothing from a tool, stool, a chair, or a vase which he could not pencil off directly. One thing we are quite certain of—that the youth who so passes his leisure hours in improving himself, and, in the words of our correspondent, "fitting himself for a good situation," will, even before he enters the situation, be more than ten times repaid from the self-respect and elevated pleasure that ever attend such pursuits when humbly but perseveringly followed—pleasure that can never be known by the young man who wastes his evenings in idle gossip, stupifies his brain in a cloudland of tobacco, or resorts to sources of amusement and pleasure that will not bear the calm reflection of the following morning.

In all these cursory notes we have merely shown what a youth who has received a common education may well study with advantage, and which he must strive to grapple with, even if he knows little more than letters and figures, if he would aspire to be recognised either as an intelligent man or an intelligent gardener. As, however, we are told on rather high authority that "the proper study of mankind is man," so without overlooking at all the importance of "knowing ourselves," perhaps the next most important thing for a young gardener, after becoming a clever methodical workman, is to be thoroughly conversant with the plants which he cultivates out of doors and in-doors. This will open up at once the whole field of vegetable investigation; and in following our researches we will find that there is scarcely a science but will tend to elucidate our subject. We would encourage rather than otherwise all the legendary lore and the poetical allusions connected with plants, as in this hard utilitarian age we have need of all aids that will soften, refine, and elevate. There is something so poetical in the very diversity of plants and flowers, that almost instinctively the young gardener becomes a botanist. He wants to know the name of a favourite flower, and he studies its distinguishing characteristics. A simple introduction to descriptive and systematic botany will therefore be desirable; and for British plants we have met with nothing better than Lindley's "School Botany." By the Linnæan system we collect the plants into large groups according to the arrangements of the sexual system: by the Natural system we collect them into orders according to their natural affinities. Few things can be more interesting than the pursuits of descriptive and systematic botany. To their honour be it said that there are many gardeners good botanists; and where the taste leads in this way we would not for a moment attempt to check such a pursuit. Still we must honestly state, that as a mere gardener, having mastered the first principles of systematic botany, it will be more profitable in general to study keenly what is styled phytological and physiological botany—embracing the different structures of plants, tracing the whole movements that take place from the germinating of a seed or the striking of a bud or cutting until the time comes when the plant dies from disease, age, or accident; thus including the functions of the different parts of plants, especially roots, leaves, and stems, and how these are influenced by soils, mechanically and chemically, by air, by dryness and moisture, by heat and by cold, by sunlight and shade and darkness, by diversity of seasons, varieties and peculiarities of climate, not merely as to the highest and lowest temperatures, and medium temperatures, but as to how these are conjoined with shade or bright sunshine, and altitude as well as latitude of the natural home of a plant. Without undervaluing in the least the keenest researches in systematic botany, as all will tell beneficially upon plants and gardening, we cannot conceal from ourselves that phyto-

logical botany is that which is the most important to the mere gardener, allied and linked as it is with so many other sciences. Had we time we could descant for months on this subject, and yet not please ourselves in making the matter simple and attractive. The great bulk of the writings of this serial have, by the closeness of their practical details, just tended to throw more and more light on phytological botany. We are the less inclined to enlarge on this tempting field, because so much has been well said for years; and a very good handbook can be procured from the office, "Science and Practice of Gardening," for 3s. We need not say that such a volume in our young days would have saved us borrowing and poring over expensive works, making many experiments as often unsuccessful as successful, and giving the cranium many a scratch behind the ear, when we got fairly in the mist and could see no light out of a dense cloudland.

We have said that we cannot enter on this study of vegetation without being drawn in to have some general knowledge of many other sciences. Thus, for instance, as respects the soil: we will be all the better if, in addition to the mere mechanical composition, we know its geological formation, and thus avoid many errors in culture, draining, &c. Frequently lime and other earths are driven for long distances, when perhaps a shaft of 30 feet or less would reveal near at hand the very thing wanted. There are many books on this charming theme, opening up worlds and worlds in the ages of the past; and few can read the pages of Lyell and Buckland without deep attention, but for a beginner the simple treatise of Phillips may be as interesting.

Then for the nature of soils, the character of manures as suitable to various crops, there is Chemistry revealing its wonders, and the strange transformations effected in plants—a science which no mere gardener can hope to master, but the principles of which, as applied to garden and field, we may fully comprehend from reading the pages of Liebig, and Johnston on "Agricultural Chemistry."

Again, independently of chemistry, there are many facts connected with water in its various states, with air as respects its weight, abundance of moisture, or comparative freedom from vapour, and the influence of heat as absorbed and radiated, that render a small treatise on hydrostatics, hydraulics, and pneumatics, the principles of caloric, and the still imperfect science of meteorology, extremely interesting; and even a slight study of these sciences would prevent us making some palpable blunders. A visitor lately on admiring our flower-beds, and compassionating the somewhat forsy appearance of the lawn, imagining no doubt it would please us with visions of abundance of water, concluded the condolence with—"But why not have an artesian well?" and that on the highest ground for miles round, and where now we go down the best part of 300 feet to reach water, and just now have only about 6 feet of water! We believe that now, dry as we have been, there is enough of rainfall here to meet all our requirements, could we only have means to keep the water until we wanted it. However, this season has taught us to leave less to chance for the future. A friend of ours, with large ranges of houses, was much worse off than we; but a small rivulet trilled along at a considerable distance, and by choosing a proper place, where the ground fell considerably, he secured a perpendicular fall of some 8 feet, and with that wrought a water-ram, which gave him abundance of water. We lately told how Mr. Pressley, of Knockmaroon Lodge, threw water from the river Liffey to the top of the hill by means of a wheel. Two fine places in this neighbourhood, situated on the top of small hills, are supplied by means of water-rams from streams in the valley. A lady who has one of the finest, if not the very finest, out-door ferneries in England, and who has as yet been supplied from a large tank, seriously proposes having a ram fixed in a stream from one to two miles off, and the water taken in pipes all the way. But for science, no such schemes could ever have been thought of. The pressure of the air becomes in such cases our force-pump servant.

Then, as to the imperfect science of Meteorology, how much better could we regulate our artificial atmosphere in glass houses, if we knew more of the condition of the air in almost every part of the world as respects weight, density, and the vapour contained in it. Our first lessons in this direction were derived from that fine old book, "Wells

on Dew." We have read the far more elaborate work of Daniell, and would like to have the chance of reading it again; but ever and anon we turn back to the close reasoning and the clear demonstrations of Wells; because, from his teaching we obtained a light as to the reason of many practices, and especially the whole of those having reference to the protection of tender plants, keeping heat in and cold out—in other words, preventing the radiation of heat. Mr. Wells clearly demonstrated that, properly speaking, dew neither rose from the ground nor fell from the air—that it was merely vapour condensed into water—and that, therefore, before dew could be deposited on any body, that body must first be cooled by free radiation below the temperature of the air holding the vapour in suspension; and thence it followed, that as clouds by arresting radiation prevented the formation of dew, and a sheet or a pocket-handkerchief suspended above the ground on a clear night prevented the formation of dew on the grass beneath it, just because radiation of heat was arrested, so the understanding of this simple matter makes plain all the mysteries about our modes of protection.

Again: Leaving such matters, we come back to vegetation and to the diseases and maladies to which it is subject from unsuitable climate, improper soils, and impure water, never forgetting, however, that plants, like men, live that they may die, and that deaths will take place when there is neither carelessness nor ignorance to be charged against the cultivator, otherwise our doctors and physicians would have a pretty time of it amongst us. One of the fruitful sources of the ill health and premature decay of plants arises from the attacks of the numberless insects to which they are subject: hence the importance of the study of entomology. The watching the changes and transformations of these insects is exceedingly interesting, and where there is a natural taste in that direction there will be sure to be a combination of pleasure and profit. We have had little boys destroying thousands of the white butterfly. We know the myriads of caterpillars we otherwise should have on every Cabbage leaf. We regret to say that most of the popular works on natural history do not give particulars enough for the student. Kirby and Spence is still a good introduction. A good deal of information will be found in the "Cottage Gardener's Dictionary," in Loudon's works, and also in the pages of this Journal; but a good work on insects that are injurious to garden and field, going into all the details of their transformations, and treating us all as if we knew nothing at all about the subject, has yet to be written. If our Editors would only do for us in this respect, bringing all present knowledge to bear upon practice, just as Mr. Johnson has done in the "Science and Practice of Gardening," we of the blue apron ought to raise a monument to their honour. At present much of what we wish to know is scattered through expensive works, which the humble means of gardeners prevent them from possessing.

And, lastly, though, as connected with the physiology of plants rather of the first than the last importance, is the study of Geography. Every department is extremely interesting, descriptive, social, political, and physical. The poor fellow who had Dr. Johnson's Dictionary put into his hands to amuse him, might well say, "It is very good no doubt, but exceedingly dry." But there is no dryness even in general geography. To most minds its facts possess all the charms of romance, because many of its stern truths are stranger than the wildest fiction. As a subject of study, therefore, our earth with its many diversities of climate, of inhabitants and of vegetation, is well worthy of serious attention. If much time cannot be set apart to this subject, much knowledge will be, as it were, incidentally gained, if in our general reading we endeavour to get a clear idea of the country or place that comes before us. We may thus become acquainted with geography just as we have hinted that many of us have done with spelling and grammar.

However tantalising general geography may be to the gardener, that which is styled physical geography is the most interesting, connected as it is with the distribution of plants according to climate, latitude, and altitude, the great divergence in this respect of the different hemispheres, the difference between continents and islands, and how vegetation is regulated, not merely by medium, but the highest and

lowest temperatures, and these, again, by dry and wet periods, by bright light, and hazy misty light. Keeping this in view, among many introductions to geography we were much pleased with a rapid glance at one by the Rev. Mr. Heale; and among cheap atlases we were much pleased by those issued by Mr. Dower, and others, chiefly because there were sectional lines, that gave one no bad idea of the physical outline of a country. There are, no doubt, more perfect and finished atlases by Keith, and others, but at a high price. We have several times heard high opinions of Knight's "Cyclopædia of Geography," and judging from the general works of that publisher, we have great faith in it, and mean to have it some day; but a young gardener cannot easily find a couple of guineas for a single work. So far as we are concerned, we should say that for gardeners there is a want of a "Physical Geography," which at ready reference would give us many of the particulars of plants in their native homes. Perhaps the most interesting facts that have come to our knowledge have appeared in the "Horticultural Transactions," under the auspices of Dr. Lindley, who in this respect, as well as the science of gardening generally, has laid gardeners under great obligations. Perhaps the most practically useful of all that has been yet published as bearing on the physical geography of plants, are a series of tables compiled by Mr. Thompson, in the "Journal of the Horticultural Society," Parts II. and III., for 1849, giving us the names of places in almost every part of the world; the latitude and longitude of these places; in many cases the elevation of these places above the level of the sea; the mean temperature of these places for every month in the year; the mean temperature of the year; the mean temperature of the seasons, winter, spring, summer, and autumn; the difference between the hottest and coldest months; the general difference between summer and winter; the number of years in which the observations have been taken, and the hours of observation. These tables give so much the information of volumes, that we firmly believe that the great Horticultural Society could exert its power in no more beneficial way than in publishing the tables separately, with clean paper for observations between each leaf. We feel quite sure if the Society disliked doing this, though we do not see how, that if they gave leave to one of our enterprising publishers, the sale would be sure to remunerate the outlay, as at present we do not know where there is so much of physical geography, so useful in

letting us know what plants from such places require, to be found in anything like the same amount of space. We would urge this all the more for our own benefit, as well as that of others, as the continued illness of our worthy coadjutor, Mr. Beaton, prevents him helping us in this respect. With his wondrous memory and vast geographic lore, which enable him to traverse the hills and dales of a country as if he had actually strode over them in a pedestrian tour, we had strong hopes that he would do for physical geography, as respects the culture of plants, quite as much, if not more, than he did for elucidating the mysteries of cross-breeding and hybridising. We do hope that he will yet be amongst us, ready to answer as well as to instruct, and then this peculiar branch will engage a share of his attention. Meanwhile there is every inducement to the young gardener to take every opportunity of storing up facts connected with physical geography.

In conclusion, we must apologise for the random nature of these remarks, indicating rather what is most worthy of attention than telling how such knowledge is to be gained. That would be to make a cyclopædia rather than an article, and we have found time merely to write the above rapidly. In addition to all the simple things we have said, we would, as a parting legacy to our young friends, say—"Be courteous, and sensitive as to the feelings of others." It is commonly reported that perhaps the most honoured gardener of the age owed the grand step of his advancement to his courtesy and good manners. A nobleman had asked him for a beautiful Rose-bud, and in cutting it he carefully removed all the prickles with his knife before presenting it and the thoughtfulness and gracefulness of the act was not forgotten. It may be all a myth, as many such tales are; but the grace and attractiveness of kind courtesy will ever be facts to attract, let rough unmannerly people think and let us then may R. F. S.

A WORD IN FAVOUR OF THE SCARLET AND ZONALE PELARGONIUMS

AS RESPECTING THEIR POSITION IN THE EXHIBITION SCHEDULES FOR 1864.

Now that the summer exhibitions have taken place and passed away, there is a resting time for exhibitors, and all who are interested in the display of plants and flowers, calmly to consider what may be done while preparing the schedules of our great exhibitions for 1864 to render the exhibitions more attractive, and to suggest such improvements as will further the objects and interests of horticulture. It is notorious that for the last few years little or nothing has been done to vary the routine of the schedules; and it has been very frequently remarked during the past season that there was a great sameness in the plants exhibited; that certain collections carry off the same prizes wherever they are sent. The same awards are annually offered; and it is a well-known fact that plants, after receiving awards at one exhibition, have been left under the care of the officials of one society till they were required for competition at another, where they have also obtained similar prizes. Now no reasonable person will say that this system can in any way promote or forward the interests of horticulture. The public begin to remonstrate at such proceedings, and justly call for a reformation.

There is, however, it must be admitted, some difficulty in obviating this objectionable state of things; and it can only be overcome by ignoring all precedents, and entering, regardless of individual exhibitors, upon a new system. All selfishness must be abandoned, and a mutual desire to make our horticultural meetings more attractive must be the sole and true motive for action. These remarks apply to every society whose object it is to promote horticulture. It would be well to ask whether it is necessary that such large collections should be required and such high prizes offered, or at any rate be repeated, for the same class of plants during the season. We are treading now upon tender ground; and it may be said with much propriety that the cost of growing these specimens is very considerable, and that the remuneration in the shape of prizes is not at all adequate to the time and care devoted to their cultivation. But surely this is not altogether a question of pounds, shillings, and pence: more noble and generous motives must be assigned to the professional exhibitors.

There is a satisfactory pleasure and an honourable emulation among our principal professional exhibitors, which induces them to endeavour to take a high position in the horticultural world. By way of suggesting something new and desirable to be inserted in the schedules of 1864, let us take one class of plants alone, which have been hitherto overlooked and neglected. Here much interest would be excited, and an entirely new feature be introduced, by offering prizes for the various classes of the Scarlet and Zonale Pelargonium. It is easy to imagine what a brilliancy they would add to our later exhibitions when flowering plants have become scarce. Were they shown under the same restrictions as the ordinary Pelargonium they would be equally worthy of cultivation. There is a great variety of foliage and colour, and if classified and exhibited as scarlets, salmon (rose or pink), and white, the effect would be most beautiful.

It is much to be desired that our principal Pelargonium-growers would give this suggestion their attention, and that they would commence at once, while they have much spare room in their houses, the necessary and preliminary training of specimens. It is impossible to overrate the beauty of well-grown specimens of this class of flowers, many of the best varieties of which are at present unknown to the floral world. Let Messrs. Turner, Fraser, Henderson and Bull set the example, and it will be immediately followed; there are many admirers of the Scarlet Pelargonium who will be ready to contribute their aid. If the councils or managers of our societies will offer liberal prizes for competition, a most interesting and at least one novel feature will be gained for the exhibitions of 1864.

THE FROST ON THE 19TH OF JULY in this neighbourhood was severe, sufficiently so to cut-off the Kidney Beans and

the Scarlet Runners. Some Cucumbers growing in the open ground, I find, are too much injured ever to do any good. The Potatoes, also, were quite blackened; and one of my workmen informed me he saw some ice the thickness of an old shilling.—W. D., North Essex.

NOTES ON GARDENS PUBLIC AND PRIVATE.

No. 1.—MESSRS. IVERY & SON'S, DORKING.

THE traveller by the South-Eastern line from Redhill to Reading must have noticed—unless he has been in that somnolent state one too often sees railway travellers in—the very beautiful character of the valley through which he passes between Reigate and Guildford. Watered by the little river Mole, its alluvial soil gives evidence of its fertility in the luxuriance of the vegetation and the fine quality of the timber; while the hills, rising high on either side, are surmounted by the residences of men of fortune, whose mansions are so numerous throughout the county of Surrey. Midway in the valley lies Dorking; and to Dorking, on one of the bright and glorious days of this most sunny summer, my steps were bound. I had long threatened, and now determined on fulfilling my threat, to visit the nursery of Messrs. Ivery & Son, known to me from my early days as identified especially with the Azaleas; and in those days of Fern-culture remarkable for what our French neighbours call a *spécialité* of hardy Ferns, more particularly those belonging to our native isle. Wherever Messrs. Ivery have exhibited their unique collection of British Ferns it has elicited unqualified admiration, and I was anxious to see them in their home; and so my visit was to the home nursery, situated close to the quaint old town, where everybody seems to have been determined to have a house unlike his neighbour, and assert the independence of a true Briton in doing as he liked with his own.

The home nursery is a sort of epitome of the various grounds, and in it are situated the greenhouses, pits, &c., where the Azaleas, Ferns, &c., are mainly grown. The dwelling-house is just such as one might expect in a nursery of so many years standing—quaint and substantial, with none of the pretentiousness of modern “stuckupishness” about it, and having in front a fine bed of Conifers. I was at once struck with the quality of the Araucarias. I do not know whether there are two kinds of *A. imbricata* or not, but the thick massive character of the branches of those I saw here were very unlike that of many which I have seen in other places, where they exhibit a rather spindly appearance. Nothing could be finer than the character of these. Associated with them were various Conifers, of which there seems to be a nice stock. *Thuja aurea* in various sizes looked remarkably healthy, although the golden appearance, as it is well known, is not assumed until winter. However well coniferous plants may thrive in poor soil there can be no question that, like most others, they rejoice in a rich, deep alluvial soil, such as they have here, where, probably more liable to be cut off by frost, they flourish with great vigour.

Azaleas have not only found here a congenial home, as the many fine plants exhibited by the firm testify, but from hence have been sent out many of our most valuable varieties. When we mention such kinds as Barclayana, Criterion, Flower of the Day, Gem, Rosy Circle, Iveryana, Tricolor, and Variegata superba, not only every Azalea-grower knows them to be amongst the best of their class, but every frequenter of our great horticultural exhibitions knows them to be amongst the most attractive to general lovers of flowers. In my way to the houses where they are now safely quartered I noticed against the greenhouse a splendid plant of *Erythrina crista-galli* throwing up some magnificent spikes of bloom. It had evidently found a place well suited for it. The stem was of great thickness, and the fine passing behind it no doubt had contributed to this result. The stock of Azaleas is large and in excellent condition, entirely free from thrips and red spider, although it has required no little care to keep these under this season, and wherever watchfulness has been omitted they are sure to have made headway.

While writing on the subject of Azaleas I cannot forbear alluding to what is called the gravel-pit-house, as it struck

me that many persons might utilise some such place in their ground. It is really a large hole from whence gravel has been taken out, about 20 feet deep, and over it has been thrown a glass roof. The walls have been somewhat cut into shape; a platform has been placed in it; and here were several very fine large plants of Azaleas in full vigour. But its value consists in the fact that it is a complete protection against frost, and that Azaleas are kept here without a fire all the winter. When very severe weather sets in, as about two years ago, then a thick covering of leaves is thrown over the glass, and mats on them, and here the plants remained unharmed all through the severe frost: moreover, it enables Mr. Ivery to retard his plants, so as to have them in bloom for the later shows. It struck me that such a place would be admirable for growing some of the New Zealand Ferns in, and that a very pretty fernery might be thus made without much expense or trouble. In walking through the grounds, which contain a good general nursery stock, I noticed some fine standard plants of *Althæa*, of which there are seven sorts, and a large plantation of *Dioscorea batatas*. Three rows of these were planted about 3 feet apart; a sort of arched trelliswork was made, and over it the foliage was running wild. The tubers are placed in ridges having a good depth of soil; and very large tubers, Mr. Ivery informed me, were thus produced.

It was from here, too, that the Buckland Sweetwater Grape was sent out, which has proved itself to be one of the very best White Grapes known, and is especially valuable for ripening in a cool vinery. I believe that the fine Grape General Marmora is almost identical with it. Mr. Ivery has also a fine collection of the various Grapes grown.

But after all the charm to me in this nursery was the fine collection of British Ferns which have been so often admired at our exhibitions. Here were to be seen the fine plants which have so often done duty in London; and here also were myriads of young ones in various states of forwardness. The seeds were all sown in heat, and in pans there were multitudes of various kinds in a state of preparation.

Mr. Ivery informed me that, whatever seed they sow, they are sure first of all to get a crop of the common hardy Fern. This arises from the quantity of spores in the peat in which they are sown; and even when the proper varieties come up they have to be proved for some time before they can be sent out. The healthy appearance of the young plants evidenced the great care and attention that had been paid to them, and I shall be very much surprised if the cultivation of British Ferns does not become very popular. The varieties are almost endless and very beautiful; and although we do not find the gigantic tree Ferns, yet we have some noble-looking varieties, and in many of the new ones most exquisite and delicate forms.

I noticed as amongst the most beautiful the following:—Amongst the *Aspleniums*, *adiantum nigrum* and *acutum*, *fontanum*, and *septentrionale*. Of the many varieties of *Lady-Fern* (*Athyrium Filix-femina*), I noticed especially *apaeforme*, a curious-looking variety, the pinnae being much in the shape of little fishes; *corymbiferum*; *depauperatum*, with tasselled-looking appendages; *Fieldia*, very curious and beautiful; *Frizellia*, another remarkable and fine variety; *multifidum*; *plumosum*, very distinct; and *thyssanotum*; and a new variety, *mucronatum*, to be sent out this autumn. *Hymenophyllum Wilsoni* is very beautiful; and extremely curious is the little *Cystopteris montana*. Amongst the Male-Ferns (*Lastrea Filix-mas*), I remarked some fine sorts:—*Bollandia*; *crispa*, very handsome; *cristata*, tasselled and very fine; *Schofieldii*, and *furcans*. Amongst the *Polypodiums* were *Robertianum*, *cambricum*, and *hibernicum*. *Polystichum* afforded some fine forms, such as *cristatum*, *plumosum*, *proliferum*, *Wollastoni* (most lovely), and *lonchitis*, or Scotch Fern. The *Scolopendriums* were very numerous: amongst them *digitatum*, *endiviatifolium*, *macrosum*, *marginatum*, *sculpturatum* were excellent. *Woodia hyperborea* is a pretty little thing. But all, or nearly all, had their peculiar beauties, and I could hardly determine which to select as most worthy of cultivation, but the above list contains some of the most desirable.

To any one desirous of commencing the growth of these beautiful forms, I do not think I can give better advice than to go down and see for themselves. The distance from London is not great. They are sure to meet with

every attention from Mr. Ivery or his intelligent foreman, Mr. Appleby, and I venture to say they will return highly pleased with their visit; and should they have more time than I had, there are Deepdene, Mrs. Hope's, and also Mrs. Cubitt's, which are well worth seeing. If they cannot do this they may very safely commit themselves to the care of Mr. Ivery. I for one hope to meet him with increased vigour at the shows next year, if not before, when I hope British Ferns will receive a little more consideration than they have heretofore done.—D., Deal.

STOPPING BLEEDING IN CONIFEROUS TREES.

A CEPHALONIAN Pine, a fine young tree 25 feet in height, was severely wounded three years ago. The blow caused a deep indent, which we filled up with a mixture of cowdung and clay; but this did not check the bleeding, and it still continues, so that the foliage is beginning to be affected. Can you tell me the right course to pursue for restoring the tree to health?—N. RYCOFT.

[A very likely way of stopping the bleeding of your Pine would be to remove all diseased appearances from the wound with a sharp knife. Then let it be seared with a hot iron, and apply a good coat of pitch while the place is dry. It requires desperate means sometimes to stop the sap in such cases, and what we prescribe is frequently effective, and is most likely to be so if applied during a season when the ground is dry, or when the sap is flowing at its minimum.]

GLADIOLUS REINE VICTORIA.

I THINK it a pity that the public should be misled by an erroneous statement made in No. 122, by your able correspondent, "D., Deal," with regard to the price of the Gladiolus Reine Victoria. I am in receipt of M.M. Verdier's price for this variety, and find they intend sending it out at 6f. per root.

Few have hailed with greater pleasure the advent of this beautiful flower than myself, and I have most particularly observed, that where a blossom of such distinction as Reine Victoria has been introduced, the price invariably maintains its ground; and will you permit me to inform your correspondent, "D., Deal," from personal observation when visiting M. Ch. Verdier some short time since, that a thousand roots of Reine Victoria would prove to him an exceedingly limited stock, and very inadequate to meet his extensive English orders?—G. P. O.

AMARANTHUS MELANCHOLICUS RUBER CULTURE.

SOME time ago you requested that your readers would give you their experience with regard to *Amaranthus melancholicus*. I do not think that any have done so, so perhaps my experience, though on a very limited scale, may be acceptable.

From my own observation and from the testimony of others, I conclude that its seeds germinate very freely. I had a very small packet, and every seed came up. In its after-growth it is very tedious. I fear that it is not suited for the damp cold climate of Ireland, for I have not seen a plant in any of my neighbours' gardens exceeding 3 inches in height. My best plants are 9 inches high and 1 foot across. I sowed them in a brisk heat, and when they came to their second leaf I pricked them out. I lost more than a fortnight by putting them into altogether wrong compost—a rather stiff retentive loam, with dull heavy sand through it. They did not grow at all in this. I then pricked them out into a very light compost composed of loam, leaf mould, burnt earth, and pounded freestone, and placed them in a Cucumber-frame. Here they grew rapidly till the first week in June, when they were put out in their beds. During that month, which was wet and cold, they did not grow at all; but during July, which was unusually dry and warm, they have for the most part grown well. I must confess, however, that there has been great irregularity in their growth, some of them quite forcing ahead of others. I have them in beds with *Rijou Geranium* Planted in alternate

rings, and with an edging of *Lobelia speciosa*, they are as beautiful beds as I ever saw, when the sun is in a proper position.

Here let me add—and I wonder I have never seen it noticed in THE JOURNAL OF HORTICULTURE—that it is highly important to choose a fitting position for this plant. Its whole beauty consists in being looked at between you and the sun; and it should be a little elevated, so that the sun may play well through its leaves, which are of a most exquisite ruby colour when thus seen—quite unapproached by any other plant that I am acquainted with. Looked at from above, with the sun beating down on its leaves, it is simply a good dark leaf. I was not aware of this, and my beds are very badly placed. They can only be seen to advantage when the sun is setting; but at that hour I often stand quite entranced with their beauty. I am sure it would be a beautiful object in a hanging-basket in a greenhouse.—Q. Q.

MACLEANIA CORDATA (HEART-SHAPED-LEAVED MACLEANIA).

Nat. ord., Vacciniaceae. *Linna.*, Decandria Monogynia. *Syn.*, *Gaultheria cordata*, of Belgian gardens.—A fine greenhouse evergreen shrub, growing 3 to 4 feet high, with upright smooth branches. The leaves are opposite, oblong-lanceolate, entire, about 3 inches long. The flowers grow



in a second manner towards the extremities of the branches, three or four from the axil of each leaf; the corolla consists of an angular tube an inch long, bright red, with a yellow limb of five small, ovate, spreading segments, greenish before expansion.—From Chili: elevated regions in a calcareous stony soil; introduced to Belgium in 1843. Flowers in summer.—(*Gardeners' Magazine of Botany*.)

MELONS.—Will any of your numerous readers tell me if they have grown Melons in pots larger than I now have here in my pinery—viz., 5½ lbs., and their mode of doing it? and oblige a constant subscriber.—J. Z.

LARGE GROWTH OF POTATOES AND LETTUCE.

I HAVE just dug up some Potatoes (they are a pink sort, imported from Belgium last year), and I find a great number of the tubers sprouting, some with sprouts $2\frac{1}{2}$ inches long. Is this common? I imported also this year four bushels of White Belgian Potatoes, some of which I have dug up to-day. The haulm is something wonderful—over 6 feet in height, and the produce of seven plants 8 lbs. $\frac{1}{2}$ oz. My Belgian Pinks last year averaged, when dug up about this time, 8 lbs. to five plants or roots, and this on a clay soil. The Potatoes, however, were planted in soot and ashes, and earthed-up entirely with ashes.

I have cut Lettuces in my garden this year, seed imported from Brussels, of the following sizes and weights:—One 36 inches round, 2 lbs. $4\frac{1}{2}$ ozs.; one 54 inches round, not cut; one 40 inches round, 2 lbs. 2 ozs.; one 52 inches round, not cut; one 42 inches round, not cut.—K. O. T.

[We commend this to the notice of our gardening friends, and shall be glad to have their opinion on the matter. Mr. Robson, to whom we forwarded the letter, says the produce of the Potatoes is remarkably good; but he expects they had plenty of room.

The dry weather, however, has so reduced the size and quality of the Lettuce on hand, that not having weighed any recently we cannot form so good an opinion on them; but yours are unquestionably good.—Eds. J. or H.]

SULPHURED WATER AS A REMEDY FOR VINE MILDEW.

It may be useful to some of the readers of your Journal to detail the means which I have found to answer in the prevention of this mildew. I have practised it for eight or ten years, and have not seen anything like mildew. I think it is also very useful to prevent other kinds of enemies attacking the Vine, as I see my Vine leaves look more healthy than those of some I have seen. There are two cases which I will mention: A friend of mine had to grow flowers all the summer in what he called one of his vineries. I went to see him about the middle of July before the Grapes began to colour. The berries were very good, but every bunch completely covered with mildew. I told him to buy 2 lbs. of black sulphur, and have two water-cans that would hold about three gallons each, to put 1 lb. of sulphur in each can, to add one gallon of boiling water to each pound of sulphur, and let it stand for an hour or two. Next, filling the cans with cold water, he was to let it stand for about twelve hours, and then pour the water off into other cans without any of the sulphur with it, or as little as possible. I told him to shut up the house early in the afternoon, and syringe well with this sulphured water, so that the bunches were well washed all over, then to fill the cans with sulphur in them, with water again, and to use it in the same manner, having the same sulphur, for three successive days. I called on my friend a few weeks afterwards, to see how the Grapes were looking, and was very pleased to see that the mildew had disappeared, and the berries were colouring and swelling well, and he had a very good crop, but of course they were not so fine as if the remedy had been applied sooner. I should state that he took all the pot plants out that were in full flower while he syringed the Vines.

The following year a gentleman wished me to look at his vinery. It was not so bad a case of mildew as the other, but the same remedy was used, and with the same good success.

Now, I treat my Vines the same, except that I use 1 lb. of sulphur instead of 2 lbs. to the same quantity of water, and I always apply the sulphured water when the Grapes are about the size of peas, and I have never been troubled with the mildew since I have done so. I think this is much better than seeing a quantity of sulphur on the Grapes, or all over the border or pipes. It would puzzle any one to detect the remedy when this sulphured water is used.

There is one thing I should like to find a remedy for, and, perhaps, some of the readers of your Journal could give me some information. I have had two large lights of Melons

looking exceedingly well and promising. A few days ago I gave them air as usual; all was right then, and the plants looked as healthy and as promising as they had done before. In the afternoon when I went to shut them up I found under one light the plant with its leaves all drooping down, not one leaf in its healthy state, and a day or two afterwards the other light went in the same way. The plants had Melons on about the size of a large apple, and since that time my Cucumbers have gone off in a similar way. How can this be accounted for?—J. K. (A CONSTANT READER).

[It is worth trying if this sulphured water will act as a preventive or cure of mildew. It is believed by many, judging from practice and not from science, that sulphur does impregnate water in which it is kept, though chemists say it is insoluble. Everybody knows that to prevent the mangle a roll of sulphur is put into the water which dogs drink. As to our correspondent's Melon and Cucumber plants, if he examines their roots we think he will find them decayed.]

ROYAL HORTICULTURAL SOCIETY.

AUGUST 4, 1863.

FLORAL COMMITTEE.—On this occasion the entries of subjects for examination were numerous. Messrs. F. & A. Smith, Dulwich, sent a very fine collection of their superb Balsams, for which a special certificate was awarded; *Brassica variegata*, and a seedling *Pelargonium* not in condition for judgment.

Mr. C. J. Perry had two seedling Dahlias, one of which, Alexandra, a light creamy ground faintly shaded with purple, of fine form and great delicacy, was awarded a second-class certificate. There is no doubt, should this flower be shown again, it will attain a higher position. The other seedling was a dark maroon of no particular merit.

Mr. Elkington, Bucks, showed two seedling Picotees of promising qualities. Exhibition, a heavy-edged flower, with remarkably pure white ground, was commended; Duke of Buckingham, a heavy purple-edged, will probably be again exhibited. The flower was small but distinct.

Mr. Bull exhibited three Ferns—*Hymenostachys elegans*, a small Fern with pellucid fronds in the form of Blechnum, with spear-shaped fertile fronds, first-class certificate; *Hymenophyllum crispatum* and *H. flexuosum*, two plants of no particular recommendation.

Mr. Chater's seedling Hollyhocks were exceedingly fine. Cherub, a rosy salmon, fine, full flower, medium size—first-class certificate. Mr. Chater also exhibited eight other seedlings of fine quality, but not sufficiently distinct from well-known good varieties. Among them we noticed Rev. H. H. Dombain, a dingy yellow, with the base of the florets shaded with rose; Rev. J. Dix, bright ruby red, a loose flower; Princess Alice, a bright rosy pink.

Messrs. Downie, Laird, & Laing, sent four very fine seedling Hollyhocks, one named R. B. Ullet, a bright light red, very full and well-formed flower—first-class certificate; Mrs. Binning, a deep rosy pink, fine-formed flower, medium size, distinct—first-class certificate; Magnificent, very similar in colour to R. B. Ullet, with a broad guard leaf—a very noble flower; Countess of Craven, delicate rose, full flower, and distinct; Carus, a deep purplish-rose. Messrs. Downie, Laird, and Laing, also sent a collection of single flowers of Hollyhocks, which received a special certificate. We must here remark that it would be both to the interest of the exhibitor as well as of advantage to the flower if seedling Hollyhocks were brought before the Committee in spikes instead of three single blooms. It must be evident to all florists that this is the only legitimate way of judging the seedling Hollyhocks.

Mr. E. P. Francis, Hertford, exhibited his dwarf scarlet *Pelargonium*, Mrs. Cowper, which was commended at the July Great Show, and from maintaining its good character was now awarded a second-class certificate. This variety much resembles Waltham Pet, but is not so bright in colour, although the flowers are not of so good form.

Mr. G. Smith, of Hornsey, sent a distinct and good variegated sport from Stella. The variegation is clear and distinct, the flowers as brilliant as Stella. This will form an attractive bedding plant. It was commended. He also had a

seedling Fuchsia, of a drooping habit, but of no other merit.

Mr. Veitch again exhibited *Mutisia decurrens*, a handsome hardy climbing plant, which had received a first-class certificate on a former occasion; also two plants of *Canna nigricans*, a dark-foliaged variety.

Mr. Keynes, Salisbury, brought three seedling Dahlias, John Wyatt, a bright purple or puce flower, distinct, and of very promising qualities. A second-class certificate was awarded. This flower will, doubtless, when shown again, obtain a higher award. The other seedlings were of no particular merit, and much resembled named varieties in cultivation.

Mr. Toogood, Westergate, sent a bright scarlet, highly-scented Clove Carnation, a very useful border plant, as a companion to the old red and white Cloves; Mr. Dobree, Wellington, cut flowers of four seedling Verbenas, which had faded in their journey; Mr. George Jackman, Woking, two very showy and beautiful seedling Clematises, hybrids between *lanuginosa* and *Hendersonii*—C. Jackmanii, a beautiful broad-petalled, violet flower; C. rubro-violacea, a finely-formed, reddish-violet-coloured flower, very distinct. Both these varieties will prove a great acquisition to our list of hardy climbers.

Mr. Whiting, Deepdene, again sent some pleasing varieties of *Calendula officinalis*, varying in colour from deep orange to bright primrose; some of the flowers shaded or mottled with each of these colours, perfect in form, much resembling a depressed *Ranunculus*.

Mr. Eyles placed three fine plants of the noble terrestrial Orchid, *Disa grandiflora superba* on the table. These plants had been grown at the Society's gardens at Chiswick in a cool frame, and were specimens of good cultivation.

FRUIT COMMITTEE.—Mr. Rivers in the chair. Numerous prizes were offered at this meeting, but the only classes in which there were any entries were Apricots and Melons. In the former Mr. Cox, of Redleaf, exhibited very fine specimens of the Moorpark and a dish of Kaisha. The latter was the only one that could compete as one of the newer varieties, and it was awarded a second prize, because the fruit were not first-rate examples of that variety. In Melons there were three competitors. Mr. Whiting, of the Deepdene, exhibited Pottle's Hybrid Green-flesh, which was not thoroughly ripe, but is evidently an excellent variety. Mr. Turner, of Slough, sent a variety called Hybrid Green-flesh, which, however, proved to be a white-flesh, and not in good condition. Mr. Crawshaw, of Cyfarthfa Castle, sent a Rock Cantaloup Scarlet-flesh, which was also unripe. As the conditions expressly stated that all fruit must be ripe and fit for table, the prizes were not awarded.

A seedling Grape was sent from Mr. Samuel James, gardener to Lord Dartmouth, Patshull, Albrighton, near Wolverhampton. It was raised from seed of Black Morocco fertilised with Black Frontignan. The bunch is very small, and thinly set; the berries are small, round, black, and covered with a fine blue bloom. The skin is very thick and tough, and the little flesh there is adheres very closely to it; the flavour is brisk and good. Judging from the specimens of the fruit exhibited the Committee did not consider it possessed any merit.

Mr. Rivers, of Sawbridgeworth, exhibited fruit of his Victoria Nectarine, which were fine large specimens of that valuable novelty, but unfortunately they were overripe, and did not convey an idea of the true flavour. The same may be said of Victoria Peach, also an excellent sort, which Mr. Rivers has found to be much earlier than Early York. Two new Cherries were also exhibited—Rival, a Black Heart Cherry of good size, heartshaped and uneven in its outline, which has the valuable property of hanging till September. Belle de Rocmont is a large black Cherry of the Black Heart race, which will be highly valuable as a late Cherry. Neither of these was as yet perfectly ripe, and gave every appearance of hanging for six weeks to come. Mr. Rivers also exhibited excellent specimens of Dove Bank Plum, a large, purple, round variety, grown in Derbyshire, and which is frequently confounded with Goliath. It has quite a rich flavour. The Early Mirabelle is a small yellow Plum in the way of Jaune Hâtive, and excellent for compôtes.

Mr. Whiting exhibited fruit of a rare variety of Peach called Early Purple. It is not the sort that is generally

known by that name, and which is a form of Grosse Mignonne; but a small Peach, the flesh of which has a tendency to adhere to the stone. The flowers are large, and the leaves have kidney-shaped glands. It is the Early Purple of Hogg's "Fruit Manual," and the Pourprée hâtive à grandes fleurs of the French.

Mr. Rivers sent samples of the Royal Ash-leaved Kidney Potato, a most prolific variety, producing very large and handsome tubers.

THE PROPOSED GARDENER'S FRIENDLY SOCIETY.

It is difficult to account for the apathy and indifference with which the proposal for the formation of the above Society has been received by the profession, more especially as the benefits to accrue to each individual are so apparent as to require no argument to demonstrate. So far, however, it seems to have been received with a greater amount of indifference than one would have thought could possibly have existed in a matter that so nearly concerns ourselves. This is much to be regretted, inasmuch as it betrays a want of unanimity and co-operation amongst gardeners generally. It is equally clear that some such Society, through which, by the expenditure of a comparatively trifling sum, a gardener can secure for himself support in sickness and in old age, is really wanted.

Thanks are also due to the respected Editors of this Journal for the interest they have taken in the matter. They supported the scheme from the first, lent their aid by promulgating a set of rules likely to meet the requirements of the case, and opened the pages of the Journal to a free discussion of the subject.

Gardeners are numerous enough and powerful enough to establish a Society of their own, and one is truly astonished that the matter was not taken up as soon as propounded and acted upon with vigour. All that is wanted is a start; the Society once fairly put upon its legs, its success is certain. The "stir-'em-up" papers that have recently appeared in the pages of the Journal from the pens of Messrs. Chitty, Earley, and others will, I hope, have the effect of rousing-up the lethargic amongst us into life and activity. I may add, in conclusion, that I shall be happy to have my name added to the list of subscribers.—J. DUNN, *Horrock Hall Gardens, Wigan.*

ON behalf of myself and many gardening friends, I thank you for your great kindness in opening the columns of your valuable Journal for discussion on this subject, and giving us the outlines of a Society. The original question seems to me departed from, and a Benefit Society substituted, which I am sorry for, as, although a Gardener's Benefit Society is very much wanted, I think a Gardener's Examination Society is wanted still more. Why are nearly all our great professional men silent? Surely it is not because they have been somewhat more fortunate than some of us, and do not want it personally.

As regards your very able and, I will say, good programme of a new Society, with its well digested scale of subscriptions for sickness and old age, living as I do in Hampshire, I know it is good in the working. But, as I opine, a great many gardeners, like myself, are now in some sort of Benefit Society—viz., Oddfellows, Foresters, &c., and having perhaps a family to bring up, could not afford to enter such a Society as you propose; but were there a separate subscription for an annuity at sixty or seventy years of age, without the sick pay, myself and I believe a great many others would join both at reduced subscriptions for the sake of future benefit, and help to form a very-much-wanted Society; still I do hope something of "G. A.'s" proposition will be added to it.—J. A., *Hants.*

[In our proposed rules of a Gardener's Benefit Society any gardener could subscribe to the annuity fund perfectly irrespective of the sick fund.—Eds. J. of H.]

THE question of a Gardeners' Society has, of late, been frequently mooted in the pages of THE JOURNAL OF HORTICULTURE. Rules and suggestions have been given; but to assume a practical form it will be necessary to hold a public

meeting in the metropolis, where all gardeners of the neighbourhood, who feel an interest in the subjects to be discussed, could attend. It is only by such means that a code of rules could be drawn up, a President, Vice-President, and Committee, &c. appointed to meet general approbation. Public branch meetings in unison with the metropolitan would then take place.

The great object is to arrange the rules and appointments to office in a manner to obtain public confidence. Now that the evenings are approaching when gardeners will have more leisure, I hope that the Editors of THE JOURNAL OF HORTICULTURE will not allow the subject to drop until it is tested by public meetings.—W. KEANE, Kensington.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CALCEOLARIA PUNCTATA (Dotted Calceolaria).—*Nat. ord.*, Scrophulariaceae. *Linn.*, Diandra Monogynia. "A very ornamental species, native of the southern provinces of Chili. Introduced by Mr. Richard Pearce, the well-known and most successful collector of Messrs. Veitch." Flowers pale lilac.—(*Botanical Magazine*, t. 5392.)

CRASSULA ROSULARIS (Spreading-leaved Crassula).—*Nat. ord.*, Crassulaceae. *Linn.*, Pentandria Pentagynia. Native of Natal and other parts of South Africa. Flowers yellowish-white.—(*Ibid.*, t. 5393.)

ANCHOMANES HOOKERI var. **PALLIDA** (Hooker's Pale Anchomanes).—*Nat. ord.*, Aroides. *Linn.*, Monocia Monandria. Native of Fernando Po.—(*Ibid.*, t. 5394.)

LEWISIA REDIVIVA (Spat'um, or reviving Lewisia).—*Nat. ord.*, Portulacae. *Linn.*, Polyandria Monogynia. This is the "Spat'um" of the North American Indians. It is called "rediviva" on account of the root, though long dried, reviving when planted. Sir W. Hooker had it two years in his herbarium, and it then produced a crop of leaves. Native of California. Flowers pink and blooming in May.—(*Ibid.*, t. 5395.)

SENECIO PYRAMIDATUS (Pyramidal Groundsel).—*Nat. ord.*, Composite. *Linn.*, Syngenesia superflua. One of the most ornamental of the genus, which includes about six hundred species! It is a native of South Africa. Flowers yellow, blooming in June.—(*Ibid.*, t. 5396.)

OPHELIA UMBELLATA (Umbelled Ophelia).—*Nat. ord.*, Gentianaceae. *Linn.*, Pentandria Digynia. Native of the Nilgherry Hills. Flowers bluish-white, blooming in June.—(*Ibid.*, t. 5397.)

MIMULUS.—*Mary*, bright yellow, blotched with crimson. *Rosa*, crimson, edged with golden yellow. *Bessie*, scarlet-crimson, edged with golden yellow; lip yellow, with irregular band of crimson.—(*Floral Magazine*, pl. 157.)

AZALEA, *Louise Van Baden*.—Of Belgian origin. Stouter-petaled than any other white Azalea.—(*Ibid.*, pl. 158.)

AMARYLLIS, *Regina spectabilis*.—Scarlet, striped with crimson, and a white band down the centre of each petal.—(*Ibid.*, pl. 159.)

RANUNCULUS.—*Fidelia*, creamy ground colour, with rosy carmine edge. *Linden*, straw-coloured ground, centre of each petal spotted with bright rose.—(*Ibid.*, pl. 160.)

DISA GRANDIFLORA SUPERBA.—Raised by Mr. Leach, the first successful cultivator of the species, than which this variety is longer-flowered and brighter-coloured.—(*Florist and Pomologist*, ii., 106.)

PEAR, *Zéphirin Grégoire*.—Raised by M. Grégoire of Jodogne. "A most delicious Pear, and, like Joséphine de Malines, is always good. It comes into use in December and lasts till February." Pale yellow, cinnamon-dotted when ripe; shape pyriform.—(*Ibid.*, 112.)

LARGE ELM.—Mr. Robson's article on deciduous trees induces me to send you the dimensions of a gigantic Elm which grew on my glebe, and was blown down by the autumnal gales of 1858. The girth at 4 feet from the ground was 23 feet 4 inches, and at 1 foot from the ground, 25 feet 10 inches. It fell obliquely across the turnpike road, blocking it up completely, and damaging considerably a Laurel-hedge and Horse-Chestnut tree in my garden. Its

height was between 70 and 80 feet. Some of the limbs were sound, but the trunk was a mere hollow shell.—ROBERT C. DOUGLAS, *Stoke Lacy Rectory, Bromyard*.

WORK FOR THE WEEK.

KITCHEN GARDEN.

OWING, probably, to the dryness of the season, I find it is a general complaint that portions of the Brassica tribe have gone off blind, or, as some call it, false-hearted. This must be looked to in time, and all vacancies filled up, as far as practicable, with strong plants from the nursery-beds, lifting them, if possible, with good balls of earth, and giving every encouragement in the way of judicious watering. Broccoli, we will suppose that all the spring and midwinter sorts have been planted some time, and that Turnips for October and November are in also; still it remains to insure a continuous succession of Cauliflowers and autumn Broccoli, also a full supply of salads. The Cape Broccoli, although apt to sport, are amongst the most useful for the certain supply of the house. Towards the end of the week the principal spring crop of Cauliflower and Walcheren Broccoli should be sown. Sow thin in an open place, and not on too rich soil, or the plants will become gross and less liable to stand through the winter. Cabbage, another sowing may be made in the end of the week to stand in the seed-bed through the winter; a late-sowing sometimes comes in very useful. Also make a sowing of Red Dutch for summer use. Celery, previous to earthing-up the first time, give the trenches a thorough watering, as the plants will not receive much benefit from its application afterwards. The earthing-up to be carefully done, the whole of the leaves being kept close together at the time. Dwarf Kidney Beans, keep the crop closely gathered, for if allowed to remain till they are too old for use they discontinue to bear as they otherwise would do. Lettuce, sow largely for standing through the winter. The Brown Cos, Black-seeded Cos, Green Cos, and Hardy Hammersmith or Brown Dutch are the best sorts for sowing at this season. Plant-out from the late sowings for autumn use. Onions, pull-up and house those that have done growing. It is a good time to sow for spring use; the Welsh is hardy, but the Deptford will stand well; and the merits of the Silver-skinned, as a winter Onion, are becoming more generally known. In regard to prescribed periods of sowing crops, in general it is advisable to study both the soil and locality of a garden that its advantages and inconveniences may be understood; there are localities where it is necessary to deviate considerably from ordinary practice to meet their peculiarities. Parsley, thin-out and cut-down a portion of the spring-sown that a fresh growth may be made before winter, a part of the thinnings may be potted in 12-inch pots for removing to frames in the winter. Radishes, sow succession crops of the White and Red Turnip. Spinach, trench, manure, and dig a piece of well-drained ground for the winter crop. From the 12th to the 15th of this month is a favourite time for sowing it. Tomatoes, expose fully to the sun the most forward of the fruit; remove some of the leaves which shade it; keep all the shoots stopped as soon as there is sufficient young fruit on the plant. As the rains are very partial, it is still necessary in many localities to continue watering seed-beds and recently-transplanted crops. Keep the soil loose where practicable. Give timely thinnings to those crops that require it, and water afterwards if the soil is dry.

FLOWER GARDEN.

We beg to repeat that this year's beauty should assist to suggest next year's improvements in the distribution of the masses in the flower garden. Attention should be given to effect, duration of bloom, habit, and colour of the different plants, and another arrangement planned for a future season. Hollyhocks, Dahlias, and tall herbaceous plants to be made safe from the effects of high winds by securely fastening them to their supports. The like attention to be paid to climbing plants against walls and trellises, standard Roses, &c. Mark the best Hollyhocks for seed. We are glad to see that this magnificent flower is becoming a public favourite. The general pruning of evergreen shrubs to take place, reducing straggling growths within proper limits, but avoid giving them anything of a formal character, the object is to assist,

not deform Nature. Cuttings of choice herbaceous plants put in early should be pricked-out or potted immediately they are struck to get well established. Early-struck Pinks and Pansies may be planted-out for autumn blooming. Young seedling Wallflowers, Brompton Stocks, Sweet Williams, and other biennials to be either planted out into reserve-beds or where they are to flower. Divide and repot Auriculas and Polyanthus, so that the young and old plants may be established before winter. Gravel walks to be frequently rolled during heavy rains to keep them firm.

FRUIT GARDEN.

The preservation of wall fruit from birds and insects should occupy attention. The bean-stalk earwig traps to be frequently examined. Worst or other small mesh netting may be employed. Look carefully over Peach, Nectarine, and other fruit trees, and remove nails or shreds that interfere with the swelling fruit. In stopping and arranging the wood let only as much as can conveniently be laid-in be allowed to remain, and that convenience qualified by due considerations for the perfection of the fruit and the proper ripening of the wood, which only the influences of sun and air can accomplish. Pear shoots which have been left or only partially shortened to be now pruned back to three or four eyes. The value of the Strawberry as a summer fruit renders its successful cultivation a matter of some importance, the more especially as it comes within the reach of the humblest possessors of a garden. The present is the best season for making new beds. Strawberries thrive best in a deep rich loam and open situation; the land should have been previously trenched 2 feet deep, and well manured, for Strawberry roots penetrate to a great depth. Select runners which have either been laid into small pots for the purpose, or the strongest which have taken root from the older beds. Water them during dry weather until they are well established.

GREENHOUSE AND CONSERVATORY.

Early provision should now be made for carrying out a late display by means of young stock in succession of those flowers which will withstand the gloom of autumn. Late Fuchsias, Achimenes, Scarlet and other Pelargoniums, Phlox Drummondii, Verbenas, Ageratums, Salvias, &c., in pots will, although not rare, greatly assist in keeping up gaiety to a late period. Carefully tie-out the different varieties of Liliun lancifolium before they come into flower. Finish the potting of Chrysanthemums, and stake them securely as they advance.

PITS AND FRAMES.

Make all necessary preparations here for propagating plants for next year's decoration of the flower garden. Make a full sowing of Schizanthus Hookeri and S. pinnatus for flowering next spring; also sow Ten-week and Intermediate Stocks for the same purpose. See that all structures are in good repair; all lights that require it to be glazed and painted, and the interior of the pits smartened-up by applying the whitewash-brush.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Dug down a quarter of Strawberries, trenching it two spits deep, stirring the bottom with a pickaxe, and turning in all the Strawberry plants, litter, &c., into the bottom of the trench. Never before turned up garden ground in such a dry hard state. The Strawberry plants had stood three years, and borne immensely, but so dry and hard had the ground become, even though the surface was well littered to keep the fruit clean, that a pick had to be used to help the spade. The weather being dull and drizzly, planted the ground as finished with Cauliflower, Broccoli, &c., lifting with balls the plants that had previously been pricked out, and planting them in trenches with the spade, and watering them as we planted them, turning the dry earth on the surface. As our last resource, broke into a deep well of house sewage, which though too strong for many things, has just been the thing for Cauliflowers and Peas. Lost some scores of heads of Cauliflower, the heads coming too soon and loose for want of water. Some of our finest rows of Conqueror Peas gave up flowering and bearing prematurely from the same cause. We were in a complete

fix; if we obtained water for vegetables and flower-beds, there was the more than likelihood that cattle would die from thirst, and you may judge of the pleasure experienced in the showers of Wednesday, windy though it was. Some splendid long rows of Calceolarias had been watered the day before from the sewage-well, as they would have died if left longer without moisture, and one good thing is, we shall have a pump to this sewage-well, and as we are so short of solid manure we will make it the means of producing fine vegetables. The scent is not suited for the flower garden, though we gave a good soaking to splendid Hollyhocks that were losing their large lower leaves from drought. The scent without any fixing soon goes off in a kitchen garden, and if people are squeamish, a little dry earth thrown over makes all as sweet as a nut. With the exception of a small reserve of clear rain water in a tank for plants in pots, and syringing, but for this old sewage-well that had not been looked at for twenty years we were entirely without liquid. What we had was drawn up in pails with ropes, but once we have the pump we shall feel more independent, having frequently proved the value of such watering for kitchen-garden purposes.

In all vegetable matters proceeded much the same as previous weeks; find that next to Cauliflower, Lettuces of a large size stood worst, but there are plenty of successions. Planted out more, and a nice stock of Endive of the first, and a little of the second sowing. Earthed-up Mushroom-bed, having previously cased it with some barrowloads of sheep-dung picked off the roads in the park. We believe that a shallow bed cased with dried sheep-dung would produce abundance of Mushrooms without any spawning at all, though, of course, it is best to be sure. So far as our experience goes, the best plan for making all right with the superintendent of the kitchen, is never to be without plenty of Mushrooms, Onions, and Parsley. As respects other vegetables, there is nothing like having plenty for an easy life; but one great secret we will let out for the benefit of our young brethren—and that is, if you are scarce of anything, never let it be known. We do not mean to insinuate that there is anything of mere contrariness about it. We base our advice on the simple principle, that we generally value most and think most about what is scarce. When we are at all short of Cauliflower, Peas, Beans, &c., it is best every way to say nothing at all about it, if you can help it. If you do, you may depend upon it that that identical article will be most in demand. The work in general has been of a routine character.

FRUIT GARDEN.

In cold nights put a little fire in the vineries, and fresh-surfaced the pipes with sulphur. Gave a little water also to the borders outside. Exposed the wood of the earliest small Vine-pit of three lights—the next five are not quite finished. In very hot days sprinkled the shelves and floor of the vineries to prevent the air being too parching. Leave on air still at night at the top of the house. To avoid drying have given little front air this season, and we do not see that the Vines seem to care about it. In fact, in all lean-to houses we look on top air as the great source of safety. In hot days these houses were frequently above 90°, at night they would generally fall to about 55° or 60°. Engineed with water Peach-house from which the lights had been removed to be painted, as red spider had made its appearance. Find some of the fruit of orchard-house marked by the brown beetle before we succeeded in getting rid of it; but on the whole we have some excellent fruit and plenty coming, though we must part with some very old trees that were in a bad state before the house was made over them. They produced very heavily last year, and the fly was difficult to dislodge this season, though even now they have a fair crop; still we should hardly like to trust them, though making fair wood. This black beetle seems to have less power to injure Nectarines. These are now fine, whilst some Peaches beside them seem to have little warts, as if the epidermis had been bitten. However, they will come in well for tarts, cream, and iced dishes for dessert. Went over Peaches and Apricots on walls, moving leaves that shaded the fruit, and giving the final thinning to Nectarines, &c., that were too thick. Watered Figs and netted Gooseberries, Morello Cherries, and late Strawberries, and as soon as possible will thin Pears on dwarfs, which are very thick—too thick to ripen

well and kindly. Planted out the last of our forced Strawberries. Potted the most of our runners, dug down as already stated a quarter of old plants, and as we can get at them will clear the runners from those we intend to remain. Some of these runners will be pricked-out on a rich border 4 inches apart, to be raised in spring for forcing if we need them. Others will be pricked-out for spring planting, and others laid in thickly by the heels to meet contingencies. Many will often ask for a few plants, and it is a pleasure to give what costs but little trouble to have. The first planted-out forced Strawberries have given us some fine gatherings, and would have done more could we have given them water.

ORNAMENTAL DEPARTMENT.

Made cuttings, potted Cinerarias, Primulas, Geraniums, stove plants, greenhouse plants, &c.; but our chief work has been in the flower garden. It is now as a whole in good condition, and we want it to look well next week, and every bed will have its look-over and training, especially in the most conspicuous places. Many turn out the plants and give them no more care, letting the sides grow higher than the middle, and the edging, which should be distinct, running all manner of ways through the bed and into the centre. Now, though we have sadly too much of it, we thoroughly indorse the opinion of our old friend, Mr. D. Thomson, that it is better to have a few beds done well than a number left as it were in a state of nature. Dry as the season has been, we have had to prune as well as regulate many beds. As a whole, Calceolarias are, and have been, dense masses, though we fear from the dryness that the autumn display will not be so fine as usual; but below the huge bundles of flowers we notice the little shoots coming with buds on their points. We should like our amateur friends to see thoroughly that half a dozen of beds done well will afford them more pleasure than one hundred beds in a tawdry condition, where the plants are left to shift for themselves, part rolled into dense heaps and half of the bed with nothing but earth staring you in the face. Merely as a sample, we may mention that some thirty small beds of about 4½ feet square, well filled and looking nicely—each bed with two and some with three colours—are just having a little tying and pegging to keep all in their places; and two first-rate workmen will require the best part of two days to make the very best of them. That group of simple beds alone, well regulated and full to overflowing, would give more satisfaction than acres in a tawdry, wild, confused state.

The dry weather has saved us mowing and machining. Many of our beds were machined—merely one cut round the verges. Cutting more would have done more harm than good. The late showers will give us greenness again. The scythe would have done more harm than the mowing machine; and in such circumstances for knocking over all heads of plantains, long grass, a sweep with our daisy-knife made all neat and trim, and we must not say the ground a man will easily go over in an afternoon.—E. F.

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We cannot reply privately to any communication unless under very special circumstances.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers.

ROSE LEAVES SPOTTED (J. Price).—If your friend mulches the surface of the earth over the roots of the Roses 3 or 3 inches thick with half-rotted stable-manure, and keeps each tree plentifully watered throughout the growing season, he will probably prevent much of the spotting, and render the Rose trees more vigorous. You may propagate the *Gentianella* by cuttings of the plants.

ROSE CHRYSANTHEMUM FLOWERS.—W. B. wishes to be informed as to the best mode of drying these Everlastings.

DISTINCTION BETWEEN THE CARNATION AND PICOTEE (J. A.).—A Carnation has all its colour radiating up to the edge of each petal in unequal stripes from its base. A Picotee has all its colour as a border on the edge of each petal. A fringed edge so far from being a characteristic of a Picotee is a defect.

CARNATION AND PICOTEE SNEED (S. D. S.).—Those who are raisers of choice varieties of these plants cross-breed, and would not for money part with any of the seed so raised. All that you can do is to buy of the best florists, and pay for seeds raised from the best flowers, and be satisfied with the chance of acquiring good seedlings. When you have obtained any you must cross-breed with old varieties, or others which may impart desired qualities probably to the progeny.

CELERY, &c. (A Subscriber).—Human urine was used in out-door forcing of Celery, as mentioned in No. 122. *Pelargonium* cuttings may be struck in the mode mentioned at page 82.

REMOVING AN EVERGREEN OAK (W. R. J.).—The answer we gave last week relative to the Holly is equally applicable to the Evergreen Oak. We should incline to move it in October during moist weather, preserving a good ball of earth about the roots, securing it effectually from being wind-waved, giving abundance of water, and mulching over the surface above the roots.

MILDEWED GRAPES (W. N. S.).—They are indeed fearfully mildewed; but we have seen Grapes quite as severely affected cured by flowers of sulphur. The sulphur was in a bowl, and this was held up so that each bunch could be smothered in the sulphur. It was left on for a week or two, and then washed off with the syringe. You will see a communication in our pages to-day upon the use of sulphured water. Try that before using the flowers of sulphur.

VARIOUS (M. A.).—We know of no method, except pickling Cucumbers less or more. We have used salting and keeping in close bottles, but with no happy result. The subject is of considerable importance. Many vegetables, as Beans, may be preserved in brine, and the flavour restored by soaking in water before using them, and we have partaken of Kidney Beans at Christmas so treated in August; but, though very fair, they would not do for epicures who wanted them fresh gathered. The "Pearl" Nasturtium is all right—it is a fine creamy yellow. The *Tropaeolums* are often uncertain. The best time to repot them is just when a tiny shoot begins to emerge from the tuber. They very often do so early in the autumn, and then is the best time to repot them. They grow fast in winter, and will bloom early in spring and summer. Peat and loam and a little old cow-dung suit them best.

TRAINING PEACHES ON DU BREUIL'S PLAN (C. S.).—Your success in the proposed plan will consist entirely on close-stopping the top, and regulating the roots so as to have each tree, from top to bottom, a wreath or cluster of buds. Unless you can give that attention we would advise planting few trees, and in the usual way.

SOWING PLEKOMIA ELEGANS SEED (Clapton).—The best time would be the beginning of March, as then the seedlings would be established before winter. We would use a middle-sized pot half filled with drainage, the rest sandy peat fine at top, mixed with sand. Soak well, allow to drain, sow, cover slightly, plunge the pot in a mild hotbed, cover with a glass, and shade before the seedlings show. Then give more air and full light by degrees.

GRAPES SPOTTED (T. H. B.).—You should have sent a berry or two, as we are uncertain of the appearance. It may for aught we know be the appearance left from syringing with water not quite clear and pure, or which may contain a little chalk in solution; or it may be the effects of scorching from deficient ventilation. In the hot days we have had lately, if you cannot give air at top, however little, by five in the morning, you had better leave a little on all night. In lean-to houses we have great faith in a little top air, and provided that is given early or left on all night, a high temperature from the sun during the day is of less consequence; and, provided all vapours are allowed to escape, there will be little danger of scalding or burning, unless there should be many spots in the glass. We ourselves never syringe our Vines but once—when done flowering, and no more. The account of the gradual colouring is all right. When a berry or two precedes the others in blackness, there is more likelihood of fine colouring than if all begin to change at once. The description of your border shows there could not well be stagnant moisture; but in the past dry weather there might be too much dryness, and we have known Grapes spot and shank from hunger, especially when the crop was large.

PRESERVING GARDEN NETTING (C. Short).—We know of no better preservative than having it tanned, storing it away quite dry, and in a very dry store-room. The "Orange Thyme" you inquire about is usually called "Lemon Thyme," its leaves emitting a perfume like that of Lemon peel. It is named by some botanists *Thymus citriodorus*, but is really only a variety of the wild Thyme, and named scientifically *T. serpyllum*, var. *citratum*.

CUTTING DOWN ZONALE GERANIUM IN POTS (Horticulture).—Unless your plants are very leggy and bare, we would not advise their being cut down too closely, although the present is the best possible time for that purpose, and the cut-off part will make cuttings; but it is seldom they can be spared so early in the season. If, however, they can be cut down now, take care that they are kept dry until they grow again, when they may be gradually inured to water. It is better not to cut the more tender varieties below all the leaves, as leaving a few on is of great service in assisting the plant to make new shoots.

CHRYSANTHEMUMS AND CAMELIAS TO BLOOM IN DECEMBER (Gertrude).—Let the Chrysanthemums stand out of doors as late as the frost will allow them; but the Camellias ought to be housed early in September unless the buds be very forward, as everything depends on the forward state those are in. We have seen a Camellia in flower in the last week in July by being kept warm until that time; while, on the other hand, we have seen them kept back until the May following; but a plant flowering in May cannot, of course, flower in July the same year. Habits of early flowering, however, are acquired by the usage of a year or two.

THE POTTED TREE in verse is not suited to our pages, and we advise the writer to confine himself to prose.

PRICES OF FRUITS, &c. (J. S.).—We have made arrangements for stating these weekly.

NAMES OF GRASS (E. T. A.).—It is not a Grass, but one of the *Spergulas*. We cannot decide which species it is unless we see the flowers.

FIGS FALLING (*E. S., West Wickham*).—On your gravelly soil there is a deficiency of moisture, probably at the roots of the trees. Raise a low bank, at about 3 feet from the stem, round each tree, and pour into it a bucket of water. Then put on some mulch and repeat the watering twice weekly, whilst dry weather continues.

VARIATED ARABIS PROPAGATION (*M. F.*).—As rooted offsets are not furnished very abundantly, we generally put in a good batch of slips any time during showery weather in the summer. We sometimes put them in as early as March, and at others as late as November, the plant being so accommodating as to strike well at all times. Of course cuttings put in late generally remain in their place until spring. We yearly raise a good quantity from spring or early summer cuttings to plant in the beds that *Geraniums*, &c., have been removed from in autumn. Any common sandy soil will do to strike them in, shading them for a time in sunny weather.

FRACHES NEARLY RIPE FALLING (*A. Z.*).—The trees are probably deficient in moisture at the roots. Treat them as we have told another correspondent to treat his Fig trees. What you term "rotting" in your Grapes is probably "the spot." The roots of the Vines should have some rich compost applied to them, and be liberally watered with tepid water. More air also should be given by day and night. Strawberries becoming mouldy in the forcing-house intimates that the air was kept too moist and stagnant. It certainly was not caused by "too much drainage."

GOLDEN-LEAVED GERANIUM (*An Amateur*).—There is a marked difference in the flowers of *Cloth of Gold* and *Golden Chain*, the former being a good scarlet almost equal to *Geranium Tom Thumb*, the latter a dull red, and not so good a shape; the foliage is much alike. We may, however, say that amongst the various kinds of this class that we grow, we like *Golden Circle* best, as it is a free-grower and is only a shade less yellow than the best of them. We have upwards of one hundred plants of each of the following kinds:—*Golden Chain*, *Golden Fleece*, *Golden Ivy-leaf*, *Golden Circle*, *Golden Vase*, and *Cloth of Gold*; and in smaller quantities *Gold-leaf*, *Mrs Pollock*, and some others. Not any of them comes up to our notion of what is wanted of a gold-edged *Geranium*; but we may be fastidious. In many instances the summer growth is so exceedingly small that propagation is a slow affair, excepting under glass in the winter and in spring months. Further articles on variegated *Geraniums* will be forthcoming shortly, and perhaps other kinds noticed.

NAMES OF PLANTS (*W. W. Wilson*).—1, the Purple Vine Bower, *Clematis viticella purpurea*; 2, *Sophora japonica pendula*, a free and fast-growing tree; 3, *Gleditsia triacanthos*, the Honey Locust Tree; 4, *Catalpa bignoniifolia*, common *Catalpa*, or sometimes called *Figonia catalpa*; 5, *Datura stramonium*, common *Thorn Apple*. (*An Old Subscriber*).—The large leaf is from *Cissus discolor*; the jointed leaf is from *Phyllanthron comorense* (Bojer), a native of the Comoro Islands, from which it must have been introduced to Brazil, whence you say you had it, probably either through Kew Gardens or by Mr. Duncan, Director of the Mauritius Botanic Garden, who exchanges plants with a Brazilian correspondent. (*G. C.*).—It is a *Lobelia*, but not to be named from a small spray quite dry. (*R. J., Spring Bank*).—*Hordeum jubatum*, or Long-bearded Barley Grass. A hardy biennial; native of North America. (*G. Sim*).—*Gnaphalium lanatum*, so much employed now as an edging plant. (*J. R. R., Unionton*).—1, *Drosera rotundifolia*; 2, *Erica tetralix*; 3, *Sphagnum*, or the grey Bog Moss, the peach-coloured variety of *Sphagnum palustre* of Withering.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

SELECTING BIRDS FOR EXHIBITION.

It is important that those who intend to be competitors for the great events of the poultry-yard, should now make selection of the birds on which their success may depend. There is, perhaps, no time of the year when this can be done as easily as at present. The evidences of growth and frame are unmistakable, and faults are equally developed. It has always been our opinion that those intended for Birmingham should there make their *début*. Admitting that they are perfect in size, shape, and condition, they have nothing to spare—all is required for success in that great contest. If that be true, nothing that is faulty can hope: no bad comb, faulty claw, or deformity can be tolerated. It is particularly at this season of the year, when the weather is hot, when meat does not relish, and when vegetables are good, young, and cooling, that poultry is most in request. It is now that the broods are scanned with an eye that threatens death to many an inhabitant of the yard. While a proper selection will certainly swell the profit column at the end of the year, so an improper one will assuredly put profit out of the question. When two large, white, succulent Dorkings appear on the table, they are not the less relished because the pullet was four-clawed on one foot, and the cock was decidedly weak on his legs. When two pretty *Hamburg* chickens, round, short, and full-breasted are being admired, no one will know they were both single-combed. It is the same with all. Every advantage of food and run should be given to those that are intended for stock or exhibition; and it is well, if it can be done, that all faulty chickens intended for the table should be withdrawn from the yard, and put in a place apart. Dorkings will, some of them, come with hideous legs, long thin claws going up all one side of the leg; others sin in an opposite direction and fail in the number—they have

four instead of five. Some appear of such colours that, although we are latitudinarians in that particular, we cannot advise them to be saved. *Hamburgs* will sometimes sport single combs and five claws. Spanish, instead of being long, thin, greyhound-looking fowls, will come dumpy, and squat-formed pullets. Indeed, every breed at times sends forth its defects.

Where eggs only are required, it stands to reason faulty birds will lay as well as perfect ones; but care must be taken none such are put under hens to produce chickens, as experience proves defects are more certain of transmission to offspring than virtues are. This is another reason why we advocate the separation of the table and faulty birds from the perfect ones—there is no possibility of a mistake in the eggs of either. It may appear of little import now, but it is possible, arrangements may be making at this time that are to last through the winter; and it would be more than tiresome to find the eggs set to produce chickens in January, to be the unmistakable produce of the pariahs. If it can be conveniently done, it is advisable in both instances to keep the sexes separate. Early maturity is desirable neither for the table nor for exhibition. In the first instance it hardens the flesh, in the second it stops growth. Chickens grow and ripen slowly in the winter; and even if they are one month too old for the table of a gourmand, yet at that time of the year, if they are killed when quite empty of food and water, they may be kept till they are tender, and they will be full of flavour. As this is intended for those who eat poultry, we will endeavour to leave nothing unsaid on that part of the subject. Although fowls that have arrived at "a certain age" may be kept till they are tolerably tender, it is not desirable to keep them till they attain that age. Care should, therefore, be taken to kill-off the oldest brood first, and not to take up the first two or three that come to hand. Often one is killed twelve weeks old and put with another that is sixteen. If the sixteen-weeks brood is killed first, there is a month before those at twelve in which they will improve daily. The observance of these trifling rules will make the poultry-yard of the cottage or the "ferme ornée" what it should be—a valuable adjunct to the table and larder, and a self-supporting and amusing hobby.

SPANISH FOWLS FOR A SMALL ENCLOSURE.

Will you tell me the number of fowls (Spanish) I can healthily keep in a yard 25 feet square; also the best way of building at its end a fowl-house 25 feet by 6?—A COUNTRY POULTRY-FANCIER.

[You can easily keep ten or twelve Spanish fowls in a yard 25 feet square. They are not fowls that require much liberty, although, when they have it, they enjoy it to the full. That number would not want a house as large as you propose to make. If you erect a wooden building in one corner it need only be 12 feet long by 6 deep. The door should be at one end of it, and not wider than is necessary for a man to go through. It should be the height of the building, not less than 7 feet. The laying-boxes, three in number, should face the door, and the perches should be in the sheltered part, and not more than 2 feet from the ground. If the house has a window so much the better. The floor should be of gravel, and there should be holes for ventilation all round the top.]

CHICKENS DESTROYED BY A HEDGEHOG.—Perhaps some of your readers may not be aware of the destructive qualities of the common hedgehog. It is one of those unhappy animals that are always killed, if not tortured, by country lads. If you ask them why, they are immediately ready with a host of accusations, which I had hitherto considered as absurd and incapable of proof as the supposed venomous nature of toads, slowworms, and other innocent reptiles; but this year I have had evidence to the contrary. It was observed night after night that a chicken was taken away from a brood about a week old, which was placed under a coop in the rickyard. As the yard was known to be infested with rats, the loss was attributed to them; so the hen and her chickens were removed and placed under a window where the

man servant slept. In the course of the night he heard a great noise, the poor hen cackling loudly in her fury and terror, and apparently making vain attempts to save her young. He accordingly went down, and on raising the coop, which was a large and heavy one, he discovered, to his great surprise, a hedgehog inside, in the act of committing depredations on the flock. The hedgehog must have raised the coop to get in, and thus displayed at once its strength and its predatory character.—S. L. J., *Cornwall*.

BRIDLINGTON AGRICULTURAL SOCIETY'S POULTRY SHOW.

WEDNESDAY, July 29th, being beautifully fine, and Bridlington having the extra attraction of the seaside, the twenty-eighth annual Exhibition was unusually well attended. Most of the classes had filled well, and pretty good competition was expected.

The show of poultry was an average one, the Hamburgs, Dorkings, Cochins, and Game being the best represented, both in point of numbers and quality. Below is a complete list of awards.

COCHIN-CHINA.—First, E. Smith, Middleton. Second, E. Witty, Cottingham. *Cock*.—Prize, T. C. Trotter, Sutton.
DORKING.—First, O. A. Young, Driffeld. Second, E. Smith. *Cock*.—Prize, R. M. Stark, Hull.
SPANISH.—First, R. M. Stark. Second, O. A. Young. *Cock*.—T. C. Trotter.
GAME.—First, H. M. Julian, Beverley. Second, C. Webster, Oustwick. *Cock*.—Prize, F. Smith, Driffeld.
POLAND.—First, R. Loft, Woodmansey, Beverley. Second, O. A. Young.
HAMBURG (Golden-spangled).—First, H. A. Hudson, Ousecliffe, York. Second, W. Horner, Driffeld.
HAMBURG (Silver-spangled).—First, C. Campling, Cottingham. Second, T. C. Trotter.
HAMBURG (Golden-pencilled).—First, W. Goston, Driffeld. Second, H. Holmes, Driffeld.
HAMBURG (Silver-pencilled).—First, J. Dilton, Cottingham. Second, T. C. Trotter.
BANTAMS (Any variety).—First, R. M. Stark. Second, Miss E. Creyke. *Cock*.—First, R. M. Stark. Second, W. Goston. *Chickens* (Distinct variety).—First, J. Yates, Hunmanby. Second, H. Elvidge, Leven Carr, Beverley.
GAME.—Prize, O. A. Young. *Goslings*.—Prize, T. Darrell, West Ayton.
TURKEYS.—First, T. Dawson, Poundsworth, Driffeld. Second, R. M. Stark. *Poult*.—Prize, T. Dawson.
Ducks (Aylesbury).—First and Second, O. A. Young. *Ducklings*.—Prize, T. Darrell.
DUCKS (Any variety).—First, M. Appleby, North Burton. Second, O. A. Young. *Ducklings*.—Prize, M. Appleby.
GUINIA FOWL.—First, H. Merkin, Driffeld. Second, O. A. Young.
FROGGS.—*Tumblers*.—Prize, B. Lesson, Driffeld. *Fantails*.—Prize, F. Key, Beverley. *Curriers*.—Prize, B. Baker, Hunmanby. *Jacobins*.—Prize, F. Key. *Any distinct variety*.—Prize, F. Key.
HARE (Any breed).—First and Second, O. A. Young. *Fancy Rabbit*.—Prize, J. Season, Driffeld.

YORKSHIRE AGRICULTURAL SOCIETY'S POULTRY SHOW.

THE Poultry Exhibition of this Society came off at South Stockton on the 5th, 6th and 7th ult. In point of numbers the entries were much the same as in previous years, and in many of the classes there was a remarkably good competition. The Spanish, Dorkings, and Hamburgs contained many pens of striking excellence.

For *Spanish*, Mr. Beldon obtained the first in the class for old birds, and Mr. Rodbard second, the latter winning, also, the prize for chickens with a very fine pen. His old birds might, perhaps, have been more successful if the hens had been in better condition, and the cock's forehead had not shown the injurious effects which age generally produces in this breed.

Taken altogether the *Dorkings*, perhaps, were the best part of the Exhibition. Mr. Whitwell was first for old birds; and the prize for chickens was given to a very good pen belonging to the Rev. Mr. Newton.

The entries for *Game* were hardly so numerous as is generally the case at the Yorkshire Shows, which may, probably, be attributed to the fact that at this season few birds are in the high condition so essential in this breed.

In the *Hamburg* classes there was a very keen competition, especially between the birds of Mr. Dixon and Mr. Beldon, and their merits were very equally balanced.

In the class for Golden-spangled *Hamburg* chickens, Mr. Dixon was particularly unfortunate, as he exhibited a pen which would have won with ease, but the cock was disqualified, as he was suffering severely from roup.

There were some remarkably good *Ducks*, especially Mr. Kell's Aylesburs and Mr. Dixon's Rouens.

SPANISH.—First, H. Beldon. Second, J. B. Rodbard. Highly Commended, S. Burn. Commended, J. Shorthose. *Chickens*.—Prize, J. B. Rodbard. Highly Commended, H. Beldon; S. Robson.

DORKINGS.—First, G. C. Whitwell. Second, G. Smith. Highly Commended, H. Beldon; J. F. Newton. (The whole class commended.) *Chickens*.—Prize, J. F. Newton. Highly Commended, H. W. B. Berwick.

COCHIN-CHINA (White).—First and Second, G. C. Whitwell. Commended, J. Dixon.

COCHIN-CHINA (Any other colour).—First, G. Smith. Second, J. Shorthose. *Chickens*.—First and Second, T. H. Barker. Commended, F. R. Pease.

GAME.—First, H. M. Julian. Second, W. A. Wooler. Commended, F. R. Pease; H. Beldon. *Chickens*.—Prize, H. M. Julian. Highly Commended, G. W. Binns; F. R. Pease.

HAMBURG (Golden-spangled).—First, H. Beldon. Second, J. Dixon. Highly Commended, H. W. B. Berwick. *Chickens*.—Prize, H. Beldon.

HAMBURG (Golden-pencilled).—First, H. Beldon. Second, J. Dixon. Highly Commended, Mrs. Hemingway. *Chickens*.—Prize, J. Dixon.

HAMBURG (Silver-spangled).—First, H. Beldon. Second, J. Dixon. Highly Commended, H. Beldon. *Chickens*.—Prize, H. Beldon. Highly Commended, J. Dixon; J. Crookes.

HAMBURG (Silver-pencilled).—First and Second, H. Beldon. Highly Commended, J. Dixon. *Chickens*.—Prize, H. Beldon.

POLAND.—First, J. Dixon. Second, H. Beldon. *Chickens*.—Prize, J. Dixon. Highly Commended, H. Beldon; W. Newsome.

ANY OTHER DISTINCT BREED.—First, J. Dixon. Second, F. Powell. Highly Commended, F. Powell; T. Appleton. *Chickens*.—Prize, J. Dixon.

BANTAMS (Black or White).—First, J. Dixon. Second, J. Skipper.

BANTAMS (Any other variety).—First, J. Dixon. Second, J. Stunby. Highly Commended, E. Brown; J. Shorthose; H. Beldon.

SINGLE COCKS.—*Spanish*.—Prize, J. Shorthose. Highly Commended, J. Dixon. *Dorking*.—Prize, F. R. Pease. Highly Commended, H. W. B. Berwick. *Cochin-China*.—Prize, J. Bell. *Game*.—Prize, G. Thompson.

HAMBURG (Golden-spangled).—Prize, J. Dixon. Highly Commended, H. Beldon. *Hamburgs* (Golden-pencilled).—Prize, H. Beldon. Highly Commended, J. Dixon. *Hamburgs* (Silver-spangled).—Prize, H. Beldon. Highly Commended, J. Dixon. *Hamburgs* (Silver-pencilled).—Prize, H. Beldon. Highly Commended, J. Dixon.

GAME.—First, J. Sherwood. Second, J. Dixon.

DUCKS (Aylesbury).—First, T. E. Kell. Second, J. Dixon.

DUCKS (Rouen).—First, J. Dixon. Second, T. H. Barker. Highly Commended, H. Beldon.

TURKEYS.—First, F. R. Pease. Second, J. Dixon. Highly Commended, Mrs. Parker.

The Judges were Mr. J. H. Smith, Skelton Grange, near York; and Mr. Cannan, Bradford.

DRIFFIELD AGRICULTURAL SOCIETY'S POULTRY SHOW.

THIS Show was held at Great Driffeld on July 31st, and was attended by an immense number of people. The classes for horses, &c., had filled remarkably well, and in many cases the competition was very severe. There was a large show of Poultry, which, considering the time of the year, were shown in good condition.

In old *Dorkings* Mr. E. Smith took first with a very good pen; and Mr. Elvidge's pen, which took first as chickens, were very promising. The *Spanish* were pretty good, but we have seen better. There was a very good show of Red Game fowls, cock and two hens; indeed, not a really bad pen in the class. Mr. Julian was first with a first-class pen of Black Reds, Mr. Adams taking second with the same colour. In this class the Judges awarded two extra prizes to two well-deserving pens of Brown Reds, one of which belonged to Mr. Boyes, the other to Mr. Adams. In Red Game chickens three good pens were exhibited, Mr. Burgess being first, and the other two pens were highly commended. Two pens only of Duckwings were entered, and of these one only put in an appearance: consequently, Mr. Adams walked over. The Duckwing chicken class was nil. Good pens of adult and young Piles won, although their opponents were not above average. *Hamburgs* of all classes were well represented, the Silver-spangled being particularly good. *Bantams* of all sorts were only inferior. *Geese* and *Ducks* were good. *Pigeons* were good, but only limited.

DORKINGS.—First, E. Smith Manchester. Second, R. Smith, Norton. *Chickens*.—Prize, H. Elvidge, Leven Carr. *Cock*.—Prize, R. M. Stark, Hull.

SPANISH.—First, H. Beldon, Leeds. Second, J. Hepworth, Hatfield. *Cock*.—Prize, H. Beldon, Gilstead.

GAME (Black-breasted and other Reds).—First, H. M. Julian, Beverley. Second, H. Adams, Beverley. *Chickens*.—Prize, R. Burgess, Lockington.

Cock.—Prize, H. Adams.

GAME (Duckwing and other Greys).—Prize, H. Adams. *Chickens*.—Prize, M. Burgess. *Cock*.—Prize, H. Adams.

GAME (Any other variety).—First and Second, H. Adams. *Chickens*.—First and Second, H. Adams.

COCHIN-CHINA. First, E. Smith, Manchester. Second, R. Clark, South Dalton. *Chickens*.—Prize, T. H. Barker, Hovingham. *Cock*.—Prize, T. H. Barker.

POLANDS.—First, B. Loft, Woodmansey. Second, H. Beldon, Gilstead.
HAMBURGERS (Golden-spangled).—First, H. Beldon. Second, W. Horner, Driffeld. *Chickens.*—Prize, J. Murgatroyd, Bishop Burton. *Cock.*—H. A. Hudson, Ouselliff.
HAMBURGERS (Silver-spangled).—First, H. Beldon. Second, S. Campling, Cottingham. *Chickens.*—Prize, H. Beldon. *Cock.*—Prize, H. Beldon.
HAMBURGERS (Golden-pencilled).—First, H. Beldon. Second, W. Gofton, Driffeld. *Chickens.*—Prize, H. Beldon. *Cock.*—J. Ellerby, Helmsley.
HAMBURGERS (Silver-pencilled).—First, H. Beldon. Second, J. Falkner, Hunmanby. *Chickens.*—Prize, H. Beldon. *Cock.*—Prize, H. Beldon.
ANY OTHER DISTINCT BREED NOT NAMED.—First, H. Beldon. Second, H. Adams. *Chickens.*—Prize, W. Gofton. *Cock.*—Prize, R. Loft.
FARMYARD CROSS.—First, H. Gowden, Bridlington. Second, J. Bilton, Cottingham. *Cock.*—Prize, G. Robinson, Frodingham.
BANTAMS (Black and White).—First, R. M. Stark. Second, G. Mosey, Skerne. *Cock.*—Prize, R. M. Stark.
BANTAMS (Any other variety).—First, W. Gofton. Second, H. Beldon. *Cock.*—Prize, W. Gofton.
GEES.—First, Mrs. Young, Driffeld. Second, Mrs. Conyers, Elmswell. *Geese.*—Prize, J. Bannister, Fridaythorp.
TURKEYS.—First, Mrs. Dawson, Driffeld. Second, R. M. Stark. *Poult.*—Prize, T. Dawson.
GUINEA FOWLS.—Prize, Mrs. Robinson, Nafferton.
DUCKS (Aylesbury).—Prize, O. A. Young, Driffeld.
DUCKS (Rouen).—First, J. Braim, Pickering. Second, T. Baker, Hovingham. *Ducklings.*—Prize, O. A. Young.
DUCKS (Any other variety).—First, J. R. Jessop, Hull. Second, O. A. Young. *Ducklings.*—Prize, Mrs. Jordan, Eastburn.
PIGEONS.—*Croppers.*—Prize, W. Watson, Beverley. *Carriers.*—Prize, W. Watson. *Trumpeters.*—Prize, T. Rippon, Beverley. *Jacobins.*—Prize, W. Watson. *Fantails.*—Prize, F. Key, Beverley. *Tumblers.*—Prize, T. Rippon. *Bards.*—Prize, W. Watson. *Nuns.*—Prize, F. Key. *Other Varieties.*—Prize, J. R. Trenam, Helmsley.
RABBITS (Any breed).—Prize, G. R. Young, Driffeld.
 Messrs. Challoner and Smith were Judges.

EGGS CHILLED DURING SITTING.

I HAVE just received your No. 118; and although I have done with poultry, so far as England is concerned, for some time, I think it but right to add my mite in reply to "Eggs Sat Upon, and then Chilled."

Sebright Bantams are proverbial for unfertile eggs. This was the cause of the added eggs. A hen sitting on eggs from 10 P.M. to daylight would hardly be worse than a hen laying in a stolen nest, and would do no harm. I have had much worse tricks played than this, and hatched all, and in one instance a hen was kept accidentally off her nest the day of hatching until the eggs were cold, and hatched half the next morning. This was a common hen and eggs.

Of Cochins, I have had the eggs quite cold three times in the three weeks, and saved two-thirds; and just prior to leaving Hilsa a Game Bantam hen let her eggs get cold twice in the first week of sitting. My man shut her in, and the eggs getting very dirty I took them out, and washed every one, put them under a Cochin hen five days before their time, and she brought seven out of nine out; and I may also add I have had hens sit at night, and stand over and on the eggs in the day for two or three days, and had to shift them to other hens that hatched them. All these results have been with Cochin-China.

As I shall not see your Journal for some time again, I shall not be able to reply to any inquiries.

I should think from the tenth day the eggs would be more likely to be spoilt by getting cold than sooner; and the first two days could hardly be of much consequence. But chickens from eggs that have been chilled are not so strong as those that have been properly sat upon.—H. HASARD, Major R.E., Quebec.

I AM very glad to find others are interested in the reasons for eggs not hatching. I waited until to-day, wishing to know whether a hen sitting on Sebright eggs would produce any chicks, before answering the query of "Y. B. A. Z." I purchased from Mr. Harvey Bayley a cock and three hens, Sebrights, first-class birds, and anticipated a good many chickens from them, having sat upwards of fifty eggs. They are in a large compartment of an aviary. I send a list of Bantam eggs, and time of hatching.

May 31st.—Fifteen eggs, the whole added.
 June 9th.—Five eggs under a Bantam, all added.
 June 10th.—Five eggs under a Bantam, all added.
 June 29th.—Seven eggs under a Cochin, six hatched.
 July 30th.—Nine eggs under a light common hen, all added.

August 2nd.—Fourteen eggs under a light common hen, all added.

From the above list you will see I have not a Bantam chick this season, a serious disappointment it is. The whole of the eggs except those whose time of hatching was the 29th of June, were quite added: therefore, in my opinion had been good eggs. Than the six hatched I never saw stronger chickens, but the clumsy Cochin managed to trample the whole to death before a week. No hens could sit better or closer than all the above.

I have now sat a hen (not on Bantam eggs) as an experiment, numbering the eggs 1 to 9. I placed the eggs under her at 10 o'clock at night, and on the following night at the same hour I took No. 1 away and replaced it at 10 o'clock the following morning. At 10 o'clock at night I took No. 2 away, and returned it at 10 the following morning. No. 3 the same, and I purpose with the remainder to give three days between, and chilling each twelve hours.

The result of this experiment I shall be happy to send you, if worth your notice. I have been thus particular in naming the time I purpose chilling the eggs, as probably out of your numerous correspondents you will have some who may feel inclined to try the same plan, and might change the hours of chilling, &c.—Evesham.

[We shall be very much obliged by a report of the result of your experiment, and wish some of our correspondents would institute similar experiments, and furnish us with the results relative to other varieties and kinds of poultry, including Turkeys, Geese, and Ducks.—Eds.]

FOUL BROOD—DESTRUCTIVE EFFECTS OF CHLOROFORM.

I AM glad to hear the "DEVONSHIRE BEE-KEEPER" has found out the cause of his bees dwindling away; and would he be good enough to say what is foul brood, and the cause of it, and how it would be known?

I observe you recommend chloroform for bees. I am afraid it will be found not to answer, as I tried it with two hives a few years since and it killed every bee; besides, the honeycomb killed every bee that went on it, and the hives were not fit to use for a long time after, and the honey poisoned all the bees I gave it to. It is a very curious chemical and absorbs the moisture from the atmosphere, so that you can never get it twice alike, and consequently, the quantity you recommend, if good, is too strong. I would advise your correspondent to use the fungus instead; and if properly done, putting the bees up with a bee-cloth and keeping them in a warm place, if the weather is cold, they will soon come round, and you will hardly find one dead.—B. B.

[Foul brood is, as its name implies, a disease which attacks the young larvae in their various stages of development. At first only a few die, but as these putrefy in their cells the infection spreads, until very few bees arrive at maturity, and the stock dwindles and ultimately perishes. The cause of its outbreak among my bees was, as I have before stated, my unwittingly making use of the combs from infected cottage-hives. German apiarians attribute it generally to the use of American or West Indian honey for feeding; and if they are correct in this, it probably arises from the disease being prevalent in these countries, and much of the honey exported being, therefore, tainted with its fatal virus. The subject appears to me of such vital importance, being the probable explanation of a great many hitherto-inexplicable failures in bee-keeping, that, with the permission of the Editors, I intend entering upon it at some length, and quoting the opinions of the most reliable German and American authorities.]

I can indorse all that is said as to the murderous effects of chloroform upon bees. I am of opinion that the late Mr. Payne never himself submitted it to the test of experiment, and am satisfied that if he had survived to edit the enlarged edition of his very useful little work, he would have expunged the passage quoted from page 27, and very probably have substituted an emphatic condemnation. I have also reason to believe that fumigation by fungus shortens the lives of bees subjected to it, however perfectly they may appear to recover at the time, and is, therefore, but one degree less mischievous than chloroform. No humane bee-keeper should rest satisfied until he has mastered the art of

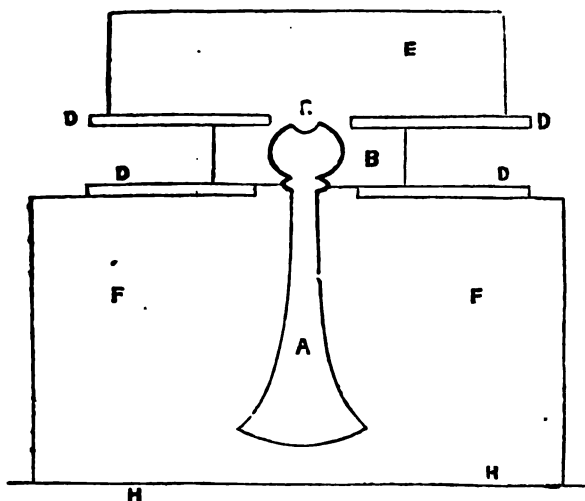
driving, described by Mr. Payne in page 59 of the enlarged edition, which is the only unobjectionable mode of uniting bees in common hives.—A DEVONSHIRE BEE-KEEPER.]

UNITING SWARMS.

You inserted my letter at page 483 of your last Volume. The mismanaged second swarm was made right by the union of another cast with it, which was accomplished by turning up the first tenanted box, and, after well sprinkling with syrup and a whiff of smoke, dashing the new comers into their midst. The union was successful without any fighting, but the strengthened stock became very irritable.

The strong stock, which was weakened by transposing, was strengthened again by the union of a good swarm. It was too heavy to handle readily, but the junction was effected by sprinkling the swarm with syrup an hour or two beforehand, and at the time of union dashing out the bees and gently lifting the old stock over, having first given a whiff of smoke. The union was peaceable, and I have since obtained some fine honey; but for several days the bees clustered largely outside the hive. These unions were of bees in common close-top hives. Another union I made much more easily with a stock in a bar-box by moving the crown-board, and, after sprinkling both stock and swarm, dashing the bees on the top of the exposed bars. I have resolved to renew my apiary and substitute frame or bar straw hives for the old close-topped ones. Having purchased of Messrs. Neighbour a Woodbury straw frame-hive, I felt disappointed there was no window. Are windows useless in such hives?

I have used this season a little contrivance for emptying supers of the bees, and have found it exceedingly convenient



- The glass trap, a vase with the foot broken off, leaving a half-inch hole where the bees descend at c. The glass A is about 5 inches long.
- A block of wood in two pieces, hollowed out to fit the bulb of the glass, and held together by an elastic band.
- Thin adapting-boards with four-inch holes.
- The super to be emptied.
- Empty box placed on a floor-board, or on the deprived hive H.

and perfectly effectual. It is made of a broken vase of glass, and is used by fixing it in a block of wood and placing it, mouth downwards, in an empty box, which may be placed over the deprived hive if convenient, so that the bees as they drop out of the trap fall into their own hive, and at last leave the spoil at the bee-master's pleasure. The apparatus may, perhaps, be best described by giving a sectional outline of the whole as in use for emptying a super.—A. B. C.

CHLOROFORM FOR STUPIFYING BEES.

CERTAIN of your subscribers have desired information relative to chloroform, and have been referred to "Payne's Bee-keeping" for directions as to its use in stupifying bees. Some persons, perhaps, had more intercourse with the late

Mr. Payne, particularly in his latter years, than I had; and I think there is some mistake, if it is to be inferred that he advocated the employment of any such agent, for I know well how much he was opposed to it, notwithstanding the words following attributed to Mr. Payne at page 18 of "Bee-keeping."

"This plan (chloroforming) possesses a great superiority over the usual mode of brimstoning, as none of the bees are killed; and over the more modern plan of fumigation by fungus or puff-ball, inasmuch as it is far less trouble." It seems odd enough that the expression "more modern plan" should here be applied to puff-ball, used for centuries, probably before chloroform was known at all for any purpose.

With the pen in my hand allow me to commiserate our friend Mr. Woodbury on the lamentable account he gives of his apiary. Though the particular disease (which I believe to be an entirely artificial one) under which it is suffering never came within my own observation, I feel inclined to endorse every word at page 98 from the pen of your excellent correspondent J. Lowe. There is an old saying among schoolboys, "We cannot eat our cake and have it too."—H. TAYLOR, London.

FAILURES IN BEE-KEEPING.

THE scientific apiary of "A DEVONSHIRE BEE-KEEPER" has come to grief, and "AN OLD-FASHIONED BEE-MASTER," of Finchley, rejoices accordingly, congratulating himself that he has never advanced one step beyond the wisdom of his forefathers. Let him do so, and welcome. I can at any time, if I feel so disposed, retaliate by crowing over one of the many old-fashioned bee-masters who come to me to pour out their tale of woe, and look for sympathy and assistance at my hands. What I wish to point out is that his quotations from Golding and Taylor are quite beside the mark. I have never urged any man to attempt scientific bee-keeping who has not the inclination and ample leisure to attend to it, nor am I one of those charlatans who, from interested motives, attribute success to any particular kind of hive. I have contrived a hive which offers, as I believe, peculiar facilities for scientific bee-keeping, but I have at once made it public for the benefit of others, without the slightest thought of either fee or reward for so doing. I publish my experience for the information of all, and should take shame to myself if I concealed my failures and blazoned forth only my successes. Had our forefathers been of the same stamp as "AN OLD-FASHIONED BEE-MASTER" bees would never have been domesticated at all, nor would even the wild honey have been appropriated by man, since probably the first would-be robber of a bee's nest got well stung for his pains, and was crowded over by all the do-nothings of his acquaintance.—A DEVONSHIRE BEE-KEEPER.

"A DWINDLING APIARY."

WITH much sympathising interest I have read the lamentable account given of his apiary by your esteemed correspondent, "A DEVONSHIRE BEE-KEEPER." Can there be any other way of accounting for the disappointment which he has experienced except on the supposition that some epidemic has visited his apiary? Why should not bees be subject to some such occasional visitation of disease as well as other animals, including man himself? And is it not possible that the continued use of artificial food in his apiary year after year, deficient in some important particular of nourishment or stimulant, may have induced a state of weakness in the bees themselves, or have occasioned some ill smell about the hives or combs which has tended to the same result? If our Devonshire friend's and Mr. Fairbrother's experiences had not been (yet are they?) exceptional, one might have attributed the evil to the wretched seasons for bees which have recently prevailed. Till quite the middle or end of June, this year has proved little better than those immediately preceding it. At that time I was almost in despair, few of my hives appearing to thrive, while I met with continual disappointment (as your pages have already told) in regard to queen-rearing. Since then a decided improvement has set in; my bees have raised several Italian queens, while others have swarmed naturally—rather too

freely perhaps. I have, moreover, begun to reap my honey harvest in the shape of 20 lbs. of first-rate honeycomb—about a third part of the estimated yield of my apiary.

If our friend's apiary consisted of English bees it were easy for us to make up his loss; but who can (this year at least) supplement his diminished Italian stock? I sincerely hope that we may yet hear that he has well saved a goodly number of his hives.—B. & W.

[I cannot but acknowledge with gratitude the kind sympathy of so accomplished an apiarian as "B. & W." To him and to many others who have expressed themselves in a similar manner, I beg to tender the warmest thanks of—A DEVONSHIRE BEE-KEEPER.]

MODERN BEE-HIVES AND FORCED SWARMS.

I THINK your correspondent, "AN OLD-FASHIONED BEE-MASTER," takes it for granted, rather than proves, that the modern way of managing bees is inferior to that "non-intervention policy" which he himself prefers. I started in the old way myself, and only abandoned it gradually, as I became convinced that only the hives were my property, the bees being free agents. Since I used bar-hives the case is altered, my little friends having to modify their instincts so as to fall in with my views. I am sure the majority of bee-keepers would be sorry to learn the sad state of "A DEVONSHIRE BEE-KEEPER'S" apiary; but few will ascribe it to scientific principles of management. Besides, this one case—a mere accident, in fact—cannot decide the question raised by your correspondent. How many of the numerous apiarists who manage their bees in the modern way have been so unfortunate as this, or more unfortunate than their neighbours of the old school? And, on the other hand, are there no disasters in old-fashioned apiaries? How many stocks domiciled in old-fashioned hives dwindle away without their proprietors even knowing why?

Your correspondent's quotations from Mr. Golding and Mr. Taylor do not support his opinion at all. The honey harvest is according to season, of course, and bees will store as much in old-fashioned as in modern hives; but it is not so available, and, therefore, not so useful to the bee-master. Such hives are not, as Mr. Taylor well expresses it, "convenient in form and management for the intended purposes." No doubt bees can manage their own affairs in their own way. Nature is equal to her own work—the propagation and preservation of the species; but it is no part of her design to assist the bee-keeper in taking honey—he must rely on his own intelligence to do that, and will act wisely to avail himself of the accumulated knowledge of his predecessors and contemporaries, and of any aid which science can offer.

A few words about forced or artificial swarms may not be out of place. Many bee-keepers entertain a dislike to them, which I cannot but consider a prejudice; for nearly all the most distinguished apiarists, both English and foreign, are in the habit of making them, and have pronounced in their favour. I have always found them successful myself. If judiciously and carefully made they can hardly fail, and have many advantages to recommend them. Leaving out of the question all scientific experiments, and the propagation of Ligurians, it is surely better—supposing that the bee-keeper wishes to have swarms at all—to get them early, instead of waiting till the honey season is nearly over, with, perhaps, several weeks of anxious watching. I have made six this present season, four with old queens, and two with brood-combs only. Both they and the four old stocks (one Ligurian) have done very well. The honey season here has been unusually good and long, and I have taken a fair quantity, but not nearly what I might have done, had I made honey my chief object, instead of Ligurianising; but the temptation to have them all of the superior variety proved too strong for me.

There are several ways of making forced swarms, all good in their way; but I think Mr. Langstroth's, described in your pages last year, is the best. They may be made without a queen, by giving them combs containing eggs and young brood instead; but the more usual way of taking the old queen with the swarm is better, as it then exactly resembles a natural swarm.

The amateur should be quite certain that he has the queen. Most of the failures that occur arise from not having her. There ought to be no such failures. In bar or frame-hives she should be looked for till found, which sometimes involves a good deal of patience. In common hives it is well not to be satisfied with driving what are thought enough bees for a swarm. The notion that the queen is among the first to rush up is too generally acted upon. No doubt she often is, but, on the other hand, she often is not. I would advise to drive them all, then placing the old hive where it stood before, remove that containing the bees a few yards away, and unstop the entrance. The worker bees, but not the queen, will rush out and return to their accustomed stand. When enough have left, the stopper may be replaced, and the swarm removed some distance away.

I should recommend your correspondent, "A CONSTANT SUBSCRIBER," and all other bee-keepers, to avoid using chloroform for stupifying bees. When so treated they return to semi-animation only; and I always found, on adding them to other stocks, that they were ruthlessly put to death, as invalid members of a bee-community usually are. "A CONSTANT SUBSCRIBER" should drive his bees; there would be no difficulty with good heavy hives, such as he describes.—JOHN P. EDWARDS, *Shirleywich, near Stafford.*

OUR LETTER BOX.

HARD SWELLING AT THE CORNER OF BANTAMS' EYE (G. F.).—We should advise lancing in the early stages before the swelling becomes hard. It is not a disease we are acquainted with, except in old Spanish hens. We imagine it comes in the first place by a froth or gum in the corner of the eye; that, we think, would be the time to hinder it by keeping it well washed with cold water and vinegar. If that failed we should not hesitate to remove it and to cauterise the wound in the early stage. We assume they are otherwise in good health.

SILVER-SPANGLED HAMBURG HEN RAVENOUS (Poulet).—The hen in question is in a diseased state, and cannot, therefore, digest food sufficiently to satisfy her, or to cause her to thrive. Separate her from the others; purge her freely with castor oil, a table-spoonful every other day for a week; feed her sparingly on ground oats mixed with water, and rather slack than otherwise. After the week give Bally's Pills. The evacuations caused by the oil will probably be green and slimy, and there will be no cure till this ceases, and the excrements are firm, brown and white in colour.

REPORTS OF POULTRY SHOWS (C. T. Bishop).—The Editors endeavour to have reports of all important poultry shows; but it often happens that they cannot have a reporter at those not metropolitan, and then if the Secretary or some friend does not transmit a prize list the Show is not reported in the Journal. We shall always be obliged by a prize list being sent to us, as it prevents disappointment.

LUMP IN SPANISH HEN'S THROAT (Constant Reader, York).—You cannot do wrong in removing the substances, and cauterising any wound it may cause. It is the only cure, and if it fails the bird will at last die of the ulcer; but we do not think she has the roup, as we never saw a roup Spanish fowl.

WINTERING BEES—DEPRIVING-HIVES (W. W. C., Denton).—We know of no precautions you can take to insure the bees in your Nutt's hives surviving the winter, except making sure that they have a sufficient store of food. We do not think it necessary, or even advisable, to take bees indoors in our climate, whatever may be done on the continent. The Woodbury frame-hive might answer your purpose; but in this matter you should judge for yourself.

AGE OF QUEEN BEES.—In answer to "A. W." about the age of the queen the printing is quite correct, nor is it the only case of queens being of that age. A gentleman in our place had several as old, which did well to the last.—A LANARKSHIRE BEE-KEEPER.

CANARIES AND BULLFINCHES SHEDDING THEIR FEATHERS (S. A.).—If your birds are not in deep moult it is very probable that they have insects, which might be ascertained by examining in the daytime the crevices and round the edges of the door of the cages. Should insects be found, put the birds into fresh cages, as the insects cannot be thoroughly destroyed in the old ones. Take care to change the birds from the old cages to the new ones in the daytime, as the insects do not leave the wood until night to infest the birds. Let the birds have plenty of fine sand and a bath every day. Wash the crevices of the old cages with a strong solution of salt and water and afterwards with clean water, which will destroy the insects, and then return the birds to them again, examine the fresh cages as well as the old ones, change the birds from one cage to the other twice or three times a-week, and if any insects appear repeat the washing.

AUSTRALIAN GRASS PAROQUET (Ornithophilus).—No. 50 is out of print, but we reprinted the directions for the management of these birds in No. 111. We shall always be ready to answer your queries.

LONDON MARKETS.—AUGUST 10.

POULTRY.

The supply of Poultry now exceeds the demand, and prices cannot maintain themselves.

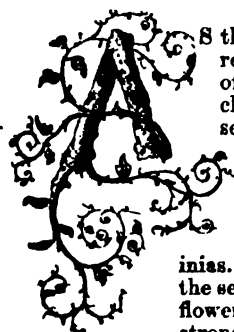
	s.	d.	s.	d.		s.	d.	s.	d.		
Large Fowls	2	6	to	3	0	Guinea Fowl	0	0	to	0	0
Smaller do.	2	0	to	2	8	Leverets	0	0	to	0	0
Chickens	1	6	to	1	9	Rabbits	1	4	to	1	5
Geese	6	0	to	0	0	Wild do.	0	8	to	0	9
Ducklings	2	6	to	3	0	Pigeons	0	8	to	0	9

WEEKLY CALENDAR.

Day of Week.	Day of Month.	AUGUST 18—24, 1883.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
18	Tu	Flacilla flowers.	78.6	62.1	62.8	15	51 a 4	18 a 7	17 a 9	8 a 8	4	8 44	230
19	W	Famitory flowers.	78.0	62.0	62.5	17	53 4	14 7	27 10	81 8	5	3 31	231
20	Th	Blackcock shooting begins.	72.6	51.3	61.9	15	54 4	12 7	37 11	1 9	6	3 17	232
21	F	Sun's declin. 12° 13' N.	72.3	49.7	61.0	18	56 4	10 7	48 0	35 9	7	3 8	233
22	S	Bospland born, 1778. Ret.	74.8	50.8	60.8	14	57 4	8 7	59 1	33 10	8	2 48	234
23	Sun	12 SUNDAY AFTER TRINITY.	74.9	49.2	60.6	18	59 4	6 7	5 3	18 11	9	2 33	235
24	M	St. BARTHOLOMEW.	71.5	48.2	59.8	16	v.	4 7	58 3	morn.	10	2 17	236

From observations taken near London during the last thirty-six years, the average day temperature of the week is 73.3°, and its night temperature 50.4°. The greatest heat was 92°, on the 18th, 1842; and the lowest cold, 32°, on the 21st, 1850. The greatest fall of rain was 0.95 inch.

SEEDLING GLOXINIAS.



For the information asked for by a correspondent regarding the treatment of seedling Gloxinias appears to include the method of sowing the seed, as well as the after-management of the young plants, it may perhaps be as well to begin at the beginning.

About the middle of February is a good time to sow Gloxinias. If deferred till further on in the season the chances are against their flowering, or forming bulbs sufficiently strong to keep well through the winter.

A well-drained pot or seed-pan should be filled nearly to the brim with soil consisting of two parts loam, one part peat, one part well-rotted leaf mould rather finely sifted, and one part sand. The top half-inch of soil should be passed through a sieve of quarter-inch mesh, and the surface made level and smooth for the reception of the small seeds. Thick sowing should be avoided, because the plants become crowded and drawn, as well as more likely to suffer from damping-off before they are large enough for being transferred into pots or pricked-off into pans. For the same reason it is a great error to sow any similar seeds thickly, for when plants become drawn and spindly in the seed-pan it requires some trouble to get them stocky again, and in the case of some things it is a hopeless task. Gloxinias are very apt to fog-off in patches when they are thick in the seedling-pot. When the seed is sown, and just sufficiently covered to hide it, the surface of the soil should be nearly half an inch below the mouth of the pot. After being watered through a fine rose, plunge the pot or pan in a gentle bottom heat where such can be afforded. They will, however, germinate freely in a temperature of 70° without bottom heat. Either a bell-glass or a pane of glass should be placed over the pot to prevent rapid evaporation of moisture and help to maintain a uniform temperature. Alternations from drought to moisture must be avoided, or the young plants may never make their appearance at all. A medium state of moisture, with as few applications of water as possible, should be the aim. With this view, in the rearing of seeds it is a good plan to place the seed-pan in a saucerful of water, when, by the action of capillary attraction, the soil is kept more uniformly moist than when water is applied at the surface in the usual way. However, the Gloxinia is by no means precarious in germinating, and with ordinary care is sure to vegetate if sown and treated as has been directed.

When the young plants make their appearance the bell-glass should be tilted up at one side, and more air admitted by degrees, till the glass be entirely removed. Care must then be taken that the young plants are not exposed to the sun, and that the surface of the soil does not at any time become mealy dry; and although shaded

from direct sunshine they should be kept on a shelf near to the glass; and, if they have come up thickly, they should either be thinned out, or pricked-off into pans before they become drawn, or run the risk of damping-off.

When they are large enough to be handled conveniently they should be potted into 2½-inch pots; and if it be an object to flower as many of them as possible, with the view of selecting the best varieties, two or three may be put into one pot: but if room can be afforded, it is preferable to pot them singly. The soil used for potting them may be exactly the same as that recommended for sowing the seed, only neither the loam nor the peat should have any of the fibre sifted out of it. When potted and well watered they may be placed in a pit, frame, or stove, where they can have a night temperature of 65° to 70°; and if they can be plunged in a bottom heat of 75° to 80° they will make more rapid progress than when simply placed on a shelf or the surface of a bed. If placed on a shelf in the stove some moss or sphagnum should be placed under and about the pots to prevent them from drying up too quickly. Wherever they are put they should not be placed in the shade of other plants, but near the glass, where they can be shaded from the sun, and have a kindly moist stove temperature. If treated thus they will soon make nice stubby-leaved plants, and will require being shifted into pots a size larger. Four or five-inch pots will be quite sufficient for the first year. A little old well-decomposed cowdung may be added to the compost already named with advantage. They should still be kept in a stove temperature, and be shaded from the direct rays of the sun in the middle of the day. Under such circumstances they will grow rapidly and make nice flowering bulbs for next season, and some may throw-up a few flowers the first season.

When Gloxinias expand their first flower they should be gradually hardened-off till removed to the greenhouse, where they will form a show in the height of summer and continue to flower a long time. They must, however, be placed in a position where they will not be exposed to drying currents of air, and they bloom best in a temperature a little warmer than is generally maintained in a greenhouse.

When done flowering and the foliage shows symptoms of waning, water at the root must be gradually withheld, and the soil allowed to become drier and drier till they are entirely set at rest for the winter. The best winter quarters for the bulbs is that where they will be free from drip and not be exposed to a temperature that ranges much below 55°.

In spring, the time to start them must be regulated by the time they are required to flower. If started in February they will bloom in June. They should be entirely shaken out of the old dry soil and put into four-inch pots, or they may be placed at once in six-inch pots, in which they will make fine plants and yield a large crop of bloom. I have never found that much is gained by putting Gloxinias into large pots, except in the case of old and large bulbs, which, of course, must

have pots proportioned to their size. Eight-inch pots will grow large bushes, that will flower profusely and in succession. It is always preferable to allow the bulbs to show signs of starting in spring before they are either shaken out or started. When they have sprung about half an inch is a good time to shake out and repot them; and when the soil in which they are put is moderately moist they should not be watered for a week or so after being potted, but may have a gentle dewing with a fine-rosed pot or syringe. Their treatment the second year may be precisely that recommended for the young seedling plants. Glorinias are among the easiest of plants to grow. A moist warm stove and slight shade from the sun while in a growing state, and when in bloom a warm greenhouse of intermediate temperature, suit them best.

Being of easy culture, and many of the varieties of exquisite beauty, they are among the most useful plants an amateur can grow. They remain in bloom a long time in summer, and in winter they are easily stored away, giving no trouble till they show signs of motion in the spring.—D. T.

GLADIOLUS REINE VICTORIA.

I SHOULD be very sorry to mislead any one, but it would appear from your correspondent "G. P. O.'s" letter that I must be doing so in respect of the above bulb; and yet I can only say that when M. C. Verdier mentioned three francs as its price, I mentioned it afterwards as a question—"trois francs?" It may be circumstances have led him to alter with regard to the number of bulbs. I still must beg leave to doubt whether he has more than a thousand flowering bulbs of it for sale. I may take the opportunity of saying that John Waterer (Souchet) is a fine noble flower of the Lihné type, very showy and good. Impératrice Eugénie has gone wrong with me, and is miserable; but there is something the matter with the bulb, I think.—D., Deal.

CAULIFLOWERS.

SECOND only to the Pea in point of excellence and utility, a regular supply of this vegetable is a desideratum. Although its culture is easy and for the most part well understood, yet there may be some who do not know how it happens that his neighbour has Cauliflowers from June 1st to January 1st when his own seldom head before July, and the first frost often prevents his having Cauliflowers in October. It is for the information of such persons that I shall make some remarks on the culture of the Cauliflower; and if any know of processes either more speedy or affording better results an account of them will be gladly received, for it is only by the exchange of opinions and experience, collected in a diversity of climate and soil, that we can hope to become enlightened in garden matters, and able to follow our calling under varied circumstances.

Cauliflowers are in season, under ordinary circumstances, from midsummer until the first severe frost cuts them off. Six degrees of frost will not destroy the heads if not exposed directly to the influence of hot autumn days followed by dew at night. Providing the leaves are turned over the heads to keep them white and close and to protect them from white frosts, Cauliflowers rarely suffer from October frosts—at least, not oftener than once out of five consecutive seasons. Notwithstanding that the Cauliflower can neither be had early nor late without artificial protection, I will treat of their cultivation both with and without protection.

WITHOUT PROTECTION.—For Cauliflowers the situation cannot be too open, nor the soil too rich and deep. The ground should be dug deeply—trenching is better—and thrown into ridges early in autumn if it is in the least tenacious. On heavy soil the manure, which must be liberally supplied, is best given in a raw or undecayed state, for it then helps to admit atmospheric air and to keep the soil open. It is best applied in the autumn. Well-decomposed manure is best for light soils, and that of a cold nature, as cow or pig manure, is to be preferred. Fresh stable, hen, or pigeon manure stimulates the plants too much, causing a superabundance of leaves without giving a correspondingly large compar. head. The ground having been ridged in

autumn should be thrown level in February and manured, if that was not done in the autumn.

Early in April prepare a bed of rich pulverised soil, leveling it and making fine. On that sow thinly Frogmore Early at one end and Dwarf Erfurt Mammoth at the other, and cover lightly with fine soil. If the ground is dry the bed must be watered in the morning. A few spruce branches that have cast their leaves laid over the bed will answer the twofold object of affording a little protection from sharp frosts and keeping linnets, chaffinches, &c., which are very partial to Brassica seeds, from pulling the seedlings up as fast as they appear. When the plants have two rough leaves prick them out to gain strength and to cause them to bear transplanting better; and if they be properly supplied with water they will be ready to plant out in three weeks after pricking-out.

In planting out stretch a line along the plot to be planted, a foot from the outside, and with a hoe draw a deep drill. Then with a trowel cut round each plant, by which means you will be enabled to lift them with a nice ball. Plant with the trowel, putting the plants in the drill quite up to the lowest leaves, and 2 feet apart and the same distance between the rows. Water immediately after planting and the plants will never droop, whereas, if they are pulled up and planted with a dibble fully a fortnight is lost; and if dry weather ensue after planting they are sure to head prematurely, often occasioning the loss of the crop. The less the plants flag the better will they root: therefore, copious waterings should be given until they become established, and even afterwards they ought never to become dry at the root; but in hot weather, after the plants are earthed, the drainage of the dunghill and slopes of any kind may be given between the rows, which is far better than applying such manure close to the stems, the spongioles of the roots being actually at some distance off. A good soaking between the rows, say twice a-week, is sure to reach the majority of the roots and prove very beneficial. Where other liquid manure cannot be had, two ounces of guano to a gallon of water makes a good substitute, and is very favourable to the development of most crops when luxuriance is the object.

Hoeing between the rows should be frequently practised, drawing a little soil towards the stem of the plants each time until the leaves nearly meet, when the final earthing-up must be given. The Cauliflower emits fibrous roots from the stem, and earthing-up materially aids in inducing the plants to do so, in addition to keeping them from rocking in a gale. It is necessary to frequently stir the ground between growing crops to prevent the surface cracking in dry weather, which it will do after heavy rains, and we all know that rain runs off instead of entering a dry, baked surface. We must, therefore, have the soil in such condition that a shower will be made the most of, and be readily absorbed, instead of running off by the surface.

Without surface-stirring and frequent watering, unless the weather be wet, Cauliflowers cannot be otherwise than open-headed and seedy, if half the crop does not head prematurely.

Success in Cauliflower-culture depends on—1st, Having the plants pricked-out before they become drawn in the seed-bed; 2nd, Keeping them growing freely, shading and watering well after pricking-out; 3rd, Planting them with a ball, or injuring the roots as little as possible; and 4th, Keeping them in free growth at all stages, by copious waterings and surface-stirring. Attention to these points and those already adverted to, as well as the hints to follow, cannot fail to result in large, firm, close, well-flavoured Cauliflowers.

When the head fairly shows itself, bring a few of the lowest leaves over it from opposite points; and to cause them to remain in the position most likely to shut out the rain and exclude sun, break the midrib of the leaf at one-third of its length from the bottom. This is done to make the head as white as snow and delicate in flavour, and unless the leaves are thus turned over the head is sure to be yellow, open, as strong as a Turnip in flavour, and emitting a smell anything but agreeable.

In unprotected gardens three sowings are enough—viz., in the beginning, and again in the end of April, and on or about the 24th of May. The first sowing will produce heads in

August, the second in September, and the last in October. The Stadtholder, Asiatic, and Walcheren, are best for the second and third sowings.

WITH PROTECTION.—Fermenting material or artificial heat, frames, and hand-glasses, are the appliances.

To produce early Cauliflowers the sowing is made in August, the second week being quite early enough; and when the weather is mild a September sowing is often preferable. It is well to provide for all emergencies: therefore I will give in close detail the particulars, and nothing can represent these better than a table showing time of sowing, pricking-out, and planting. The dates are the means of fifty years observations, as noted by an old gardener, and they have been verified and practised by myself, and found to answer.

Sown.	Pricked-out.	Planted.
March 1st (on hotbed).....	March 29th (on hotbed)....	May 1st.
March 9th (under south wall).	April 21st.	May 23rd.
April 8th.	May 14th.	June 4 h.
May 2nd.	June 3rd.	June 20th.
May 24th.	June 21st.	July 15th.
June 4th.	July 1st.	July 25th.
August 23rd.	{ October 2nd (under hand- glasses and frame)..... }	April 15th.
September 3rd.	{ October 15th (in frame, part potted and put in a pit)..... }	April 29th, and May 9th.

From the above table it will be seen that the obtaining of Cauliflowers early was well provided for. If those under hand-glasses failed, there was the second autumn-sowing to rely upon; but had these also disappointed, there was the spring-sowing on a hotbed. If all did well, the hand-glass division gave heads early in June, the potted ones followed next, beating by ten days those transplanted from the frames, and those on hotbeds were little, if any, behind the transplanted ones.

I have heard old gardeners talk of being able to have Cauliflowers all the year round, but have not been gratified by seeing it done, though I have no doubt it has been. I have cut Cauliflowers on New Year's-day, and in almost all seasons they may be had until Christmas. Snow's Winter Broccoli in mild seasons may be had in January and February, which, with Knight's Protecting, will see us into March, when Malta, a dwarf and somewhat tender kind, comes in, followed by Dilcock's Bride, Elletson's Emperor, and Mammoth, winding up with Invisible White Broccoli in May, a few of which taken up when the heads are about the size of a small doubled hand, and laid-in under a north wall, will generally be retarded three weeks, or until Cauliflowers come in from hand-glasses. I have no doubt, therefore, that some gardeners may have had Cauliflowers seven months, and Broccoli five, out of the twelve.

Cauliflowers should be pricked out under hand-glasses in rather poor soil, for the main object is to have them well rooted before severe weather sets in, and they will produce more fibres and root more quickly in a rather poor than in a rich compost. A sheltered site should be chosen, and if the plants will stand sun without flagging they should not be watered from November until the close of March; in fact, they seldom will need a watering after that given at pricking-out time to settle the earth about their roots. A dozen or more may be pricked out under each hand-glass on condition that they be reduced to three, four, or five in the April following.

Square hand-glasses, 1 foot 6 inches on the side, 10 inches in depth to what may be termed the eaves of the hand-glass, and with a moveable top, are the description to be preferred; for when the top is taken off the bottom is left to shelter the plants from cutting winds, though exposing them well to the air. With the other kind of hand-glasses the plants are often exposed to chilling draughts, and frequently do not form anything like a head afterwards. Plants are acted on by draughts similarly to animals. Sudden changes in temperature give colds to animals; and so in plants—sudden changes are hurtful, and if long continued cause the death of the subject.

Whenever the temperature is above 32° Cauliflowers should have air, and when it is above 40° the lights of frames or the tops of hand-glasses should be taken off and not put on again until from frost or heavy rain the doing so becomes an imperative necessity. Cauliflowers cannot have too much air or too little water during winter, or too much

of either when growth is wanted. During severe frosts the lights may remain closed, providing the sun does not melt the snow off the glasses or thaw the frosted leaves inside. Snow should never be swept off the lights, for it is the best of all protective coverings; and when the lights are matted, which they should be in severe weather if no snow falls, the mats should not be removed until the plants are thoroughly thawed; otherwise, the sun shining upon the frosted leaves will have the same effect upon them as warm water has upon frosted greens. Frosted plants of any kind cannot thaw too slowly, otherwise the tissues burst. The soil should be frequently stirred and every possible means taken to promote a healthy state, and then the plants will thrive. They cannot flourish in an impure atmosphere, nor form sturdy growth in a close frame.

After March the lights should be taken off frames and the tops of hand-glasses removed every morning before breakfast, and put on again the last thing before ceasing work for the day. A little fresh soil should be added as the plants advance in growth, and by the beginning of April they will need thinning. Do this as much as possible without injuring the remaining plants, which must be well watered and earthed well up. Where there is a number of hand-glasses half of them may be reduced to five plants in each, and the other half to three. Hand-glasses with five plants beneath them will come into bearing sooner than those with three, for by limiting the supply of food at command we induce early flowering.

After the 13th of May the hand-glasses may be removed altogether if they be wanted for other purposes, as ridge Cucumbers, &c.; but a few should be left over the plants, by which means a succession is certain, and heads may be cut under them in May sometimes, but with certainty in June. As the plants advance in growth earth must be placed round the stems, leaving it something like a mound with a flat top dished to hold water. Water must be constantly given at night in dry weather, or the head will be small and as soft as a puff-ball.

The treatment of Cauliflowers in frames is identical with that of plants under hand-glasses, except that they are planted out as from a pricked-out bed, and every cottager in the village may receive his score or two of plants.

In sowing in pans or frames the seeds must be scattered thinly and abundance of air given, or blacklegging (the stems damping-off near the soil), or drawn growths result. Too much water causes damping, and sudden changes of temperature induce premature heading. It is scarcely possible to have good-sized Cauliflowers from spring-sown plants before July, though I have heard many gardeners advocate spring-sowing in preference to autumn-sowing, even insinuating that they can obtain as good heads and as early from one as from the other. I have tried both plans, and never could grow anything worth calling a head before the middle of July from a spring-sowing, though I certainly have had some small heads open enough for anything from similar sowings; but they were only fit for stews. Spring-sown plants make a first-rate succession to autumn-sown, and for that reason a sowing in heat in spring is desirable.

Passing over the treatment of after-crops, which has been given at an earlier stage, I will take October, when the plants from the June sowing will have nice heads forming. When these are about half the size they would attain if left growing, bring all the leaves together over the heart and tie them with matting as for blanching Lettuce, then with a spade cut round each plant at 9 inches from the stem, not leaving any uncut part. Sixty plants will be ample to serve in this way, and should no frost greater than 10° happen no injury will result to the heads, which will be retarded a fortnight or three weeks. At the same time select one hundred plants, more or less according to the size of the establishment, and with a spade cut down the depth of the spade on three sides of the plant, and with the last cut lift up the plant and carry it just as it is to a north border, where a trench has previously been opened to receive it. In this place put the plant, leaning it with the head towards the wall, and cover the stem quite up to the leaves in addition to covering the roots. Tread the soil gently down, and put the plants as closely together as possible without literally being one upon the other. The plants, it should be borne in mind, must not have heads larger than one-quarter

of the size they would be when full-grown, nor less than a medium-sized Apple. If the ground is very dry water may be given, but not much, and no more ought to be allowed from the watering-pot. The leaves will flag and cover the head, which is desired, and the head will enlarge though the leaves decay, and these must be removed whenever they do so. When frosts occur cover with clean straw—litter will do—but take the covering off in mild weather and increase or decrease its thickness according to the mildness or severity of the weather. No frost that occurs in our climate oftener than once in half a century will harm Cauliflowers with 6 inches of straw immediately over them, for we have earth heat and one of the best of all non-conducting mediums—straw. By this plan we can cut Cauliflowers at Christmas.

An open shed is a better place than a north border for protecting Cauliflowers. There they are not liable to rot and are shielded from drenching rains. A few plants taken up on the approach of frost and hung in a cellar, roots upwards, will keep a long time.

Of diseases and insects there are three that attack Cauliflowers—viz., *Shanking* or *Withering* of the Stem in the seed-bed, *Clubroot* incidental to all the Cabbage tribe, and the *Cabbage Caterpillar*. The first is promoted by sowing too thickly in the seed-bed, which prevents air and sun reaching the neck of the plants. It is seldom that shanking occurs in the open ground. Sowing more sparingly and giving abundance of light and air is a sure preventive of the disease.

Clubroot is engendered by sowing Brassicas on the same ground too often without change, and rarely shows itself in the Cauliflower on newly-turned-up ground. Dipping the roots in a mixture of soot and lime at pricking-out time acts as a preventive. Any plant that looks sickly should be taken up, and if on examining the root an excrescence is found it should be opened, and a grub will be seen. If this be taken out, and the roots dipped in soot and lime water and replaced in the soil, the plant will grow.

Hand-picking is the best cure for the caterpillar, and giving a small sum to children for every butterfly taken the best of all preventives.

Soot will keep snails and slugs at bay, and a liming now and then is a sure way to free the soil from insect pests, besides increasing its fertility.—GEORGE ABBEY.

SOWERS.—The following are what I would recommend:—*Early London* (Covent Garden, Improved Early London, London Particular).—A useful early kind; best for August and early spring-sowings.

Prognose Early Forcing.—Of dwarf and compact growth, heads large and fine, flavour excellent. Best for frames and wintering in pots; stands confined air better than any other Cauliflower.

Dwarf Erfurt Mammoth.—Dwarf, about 1 foot in height, producing a large, close, compact head. White and delicate eating; best for spring-sowings.

Asiatic (Leyden).—The largest summer Cauliflower in cultivation.

Walcheren.—A good old sort, difficult to procure true; stands the winter well.

Stadtholder.—A free-growing variety; heads close, large, and firm. Best for autumn use, and a better variety than the *Walcheren*.

Le Normand.—Grows from 1 foot to 1 foot 6 inches high; heads medium-sized, close, and firm. A very excellent variety, standing drought well.—G. A.

VINE LEAFSTALKS GANGRENING.

In February last I planted two houses of Vines, the roots being in an outside border composed of fresh turf from a pasture, with one cartload of stable-manure, and one barrowful of rough bones to eight loads of soil. I kept the houses moist and shaded until the middle of July when the Vines had reached the top of the house. I then stopped them, removed the shading, and gave more air. In a few days the leafstalks became soft near the bud, the leaves hung down, and soon afterwards died. Hamburgs at the coolest end began first, but they all are going more or less. Pray what are the cause and cure?—VITIS.

[You have given the Vines a border rather too rich. They should have had no shade after beginning to grow.

Your only remedy is to shade a little in the middle of the day now, so as to avoid sudden change. The Vine in general cannot have one ray of sunlight too much. See that the border is moist enough, and give plenty of air.]

FAWSLEY HALL, NEAR DAVENTRY.

"Any place but Daventry. I cannot go *there*. Why, it is five miles from a railway station, and the telegraph wires stop a quarter of a mile short of the town, because even a message per annum was considered hopeless!"

Such was a friend's response to a proposal to visit this Benaventa of the Britons, and Isannavaria of the Romans.

However, his fear of banishment was overcome; we travelled by the North Western Railway to Weedon Station, were duly met by a friend's phaeton, stayed some days at Daventry, and when we turned our backs upon the old town, the last head-quarters of the king of infirm purpose before he ruined his cause on the not-far-off field of Naseby, our friend acknowledged that "there is something worth seeking beyond the reach of railway trains and telegraph wires."

Let us trace what this "something" is about Daventry. And, first, of Fawsley Hall.

There is something in a name—and there is something in bearing such a name as "Knightley of Fawley," that must deter from unworthy conduct—something that summons to one's mental groupings all that belongs to and characterises "the good old English gentleman;" and we rejoiced when told of traits in the present baronet's character, full-worthy of one among whose ancestors was a daughter of John Hampden; and the Norman founder of whose family, "Rainald de Chenistelei," was with William the Conqueror.

Fawsley Hall is about four miles from Daventry, and is arrived at by a road of very varied beauty through the village of Badby, and the Fawsley Woods. We halted for a few minutes to search for old inscriptions in Badby Church, and though we failed in finding marble effigies of cross-legged knights, or even a single brass, yet there was one recent tablet which made one take a long breath, and think how that heart had suffered which recorded that "the angel of the house" was gone, and added, "May my two sons imitate her virtues, and thus be a blessing to their father." We passed on saddened, if not wiser, and soon were among the Fawsley Oaks, beneath which there is no doubt Hampden, Pym, and other kindred spirits had held council with Sir Richard Knightley, who then was Fawsley's lord, how best to resist the Stuart tyranny.

But it is with the garden we have more immediately to do. Our visit being a very short one, too short to enable us to enter into full particulars of the beauties and attractions of this interesting place, we shall merely notice a few of the objects that formed the greatest attraction for us.

Having been introduced to Mr. Brown, the gardener, he at once conducted us to the points which he knew would afford the greatest interest, and which brought out the most prominent features of the department under his care. Conducting us down the west side and on the outside of the walls, along a broad walk tastefully planted on either side with a profusion of flower-beds, we entered a covered walk which runs at right angles with it, and communicates from the kitchen garden to the Hall. This covered walk is one of the features of the place. Issuing from a shrubbery and plantation which separate the kitchen garden from the park, the distance between the shrubbery and the entrance to the garden is planted on either side with a hedge of *Horbeam*, which has been trained over so as to form a spacious archway of beautiful proportions, and which is kept in very fine order. It is not one of those dense wild masses, with merely a passage cut through it, but is of itself a work of art, upon which no small amount of skill and labour is bestowed. Although not more than 9 inches or a foot in thickness, it is perfectly close, and affords a cool and agreeable shade. At the end of this walk is the entrance to the kitchen garden through large folding-doors, and here it was the beauties of the place were exposed to our view.

Like a first-rate artist, Mr. Brown knew well how to exhibit his picture with the most telling effect. While we were yet at the farther end of the covered way, Mr. Brown hastened a little in advance of us, and throwing open the

double folding-doors at one effort, there burst upon us such a blaze of floral beauty as quite arrested us, and made us as if to recoil with the force of the impression it made. The scene that was thus exposed was the centre walk of the kitchen garden, with ribbon-borders on either side of it 153 yards long, and 3 yards wide. Whether it was the sudden effect produced by Mr. Brown's clever overture, or the intrinsic beauty of the arrangement itself, or both combined, but we were impressed with the feeling that we never before saw two such ribbon-borders.

For the benefit of our readers we have pleasure in being able to record their composition. Commencing from the gravel walk—

1st row, <i>Lobelia speciosa</i> .	5th row, Golden Chain Geranium.
2nd " <i>Mangles' Variegated Geranium</i> .	6th " <i>Lady Sale Scarlet Geranium</i> .
3rd " <i>Purple King Verbena</i> .	7th " <i>Countess of Cork Variegated Geranium</i> .
4th " <i>Comet Scarlet Verbena</i> .	8th " <i>Perilla nankinensis</i> .

The same was repeated on the other side. The borders were in the very height of their beauty, and with the exception of Comet, which was a little too dwarf to be between Purple King and Golden Chain, the whole was perfection.

Immediately behind these ribbons are rows of pyramidal Pears and Apples, some of them trained *en quenouille*, and now from 8 to 10 feet high. Most of them are covered with fruit, and although they were removed into this position only two years ago, they are now perfectly re-established, and form a pretty feature behind the ribbons.

Having gone the whole length of this broad walk, and reached the opposite end, we turn to the right towards the range of houses. Here, again, our eyes were dazzled, and our breath bated. Immediately in front of the houses is another broad walk, speaking from memory, about 10 feet wide; and on one side of it another ribbon-border, if possible even finer than the other in effect, and certainly more perfect in arrangement, for here there was not a flaw to jar the harmony of the whole. It is also 153 yards long and 3 yards wide, and is arranged in the following order:—

1st row, <i>Cerastium tomentosum</i> .	6th row, <i>Lady Sale Scarlet Geranium</i> .
2nd " <i>Lobelia speciosa</i> .	7th " <i>Jane Variegated Geranium</i> .
3rd " <i>Mangles' Variegated Geranium</i> .	8th " <i>Victoria Scarlet Geranium</i> .
4th " <i>Purple King Verbena</i> .	9th " <i>Gladiolus brecheneyensis</i> .
5th " <i>Centaurea argentea</i> .	10th " <i>Perilla nankinensis</i> .
	11th " <i>Hollyhocks</i> .

In this border the two most attractive lines are the *Centaurea* and the *Gladiolus*, the fine broad and solid-silver effect of the former fully justifying the great expectations formed of it by Mr. Beaton when first he noticed it in these pages, and the graceful stateliness of the latter forming a fine transition between the dwarf Geraniums and the tall Hollyhocks. At this season the *Perilla* cannot be said to make any striking effect, as it is in a measure hidden between the *Gladiolus* and the Hollyhock, and is intended to come in when the *Gladioluses* are over.

Never have we seen such a stock of the *Centaurea* as we did here, and from the way in which it has been used there is no doubt it will prove a permanent material for a third, fourth, or fifth-row plant of silvery character far surpassing in effect the old *Cineraria maritima*.

On the border next the houses there were beds of various forms filled in the usual way; but there was a round one that especially attracted our attention filled with Mrs. Pollock, one of those beautiful chromophyll Geraniums. This was the first time we had ever seen it in a mass, and, judging from this example at Fawley, we do not doubt but that it will form a new and telling feature both in beds and ribbons. In the same bed there were a few plants of *Sunset*, also one of the chromophylls, but the effect produced by it in comparison with Mrs. Pollock was poor in the extreme.

The range of houses occupies nearly the whole length of the garden. A considerable extent of them is devoted to Peach culture, that part on the west side of the centre being generally forced, while that at the eastern extreme has no artificial heat, although pipes are provided in the event of being called into requisition. And here we must again compliment Mr. Brown on his skilful cultivation. These trees on the walls are the very pictures of health, vigorous without being gross, and producing a luxuriant dark green foliage, some of the leaves being from 8 to 9 inches long, and proportionately broad. The climate of this part of Northamptonshire is such that Peaches and Nectarines cannot be

grown with any degree of success against walls in the open air; but this deficiency is amply compensated for in the great success that Mr. Brown attains under glass. The sorts that are most grown are the Royal George and Noblesse Peaches, and the Violette Hâtive Nectarine.

In the early vinery, now nearly over, there were still some good examples of Black Hamburg. In one of the vineries there is a mixed collection, which we believe is intended only to be temporary. Among these are—Trebbiano, Lady Downes', Golden Hamburg, &c., but as a late sort, Mr. Brown intends for the future to rely on Lady Downes', and has accordingly planted a whole house with this valuable variety exclusively. The Vines in all of the houses have been but recently planted, and are in a state of healthy vigour.

In the Fig-house, which, too, is a mass of luxuriance, there was an excellent crop of Brown Turkey, or, as it is sometimes called, Lee's Perpetual, and one plant of another variety called Datte, a strong, indeed too strong-growing variety for house culture. It is, nevertheless, a good Fig, and is one of those varieties we find extensively in the markets of Auch, Toulouse, and Montpellier. As we get higher up into Provence, it is not so common. We doubt very much, however, if this sort, on account of its strong and robust growth, is adapted for in-door cultivation.

In the centre of the range, and standing out at right angles with the wall, are two span-roofed stoves, both of which were gay with flowering exotics, among which were large hanging-baskets of various sorts of *Achimenes*. At the end of each, and entirely covering the wall, were plants of that singular plant, *Aristolochia ornithocephala*, certainly one of the most remarkable plants in cultivation, grotesque beyond all measure. Imagine the head of a vulture, size and shape included, with an enormous scythe-shaped beak 9 inches long, with a great flapping bib or wattles under its chin 6 inches wide and 3 deep. The head and bib are of a steel grey colour, finely netted with a mahogany brown, and the beak is entirely of the latter colour. There is in these houses a fine collection of select Orchids, many of them very fine specimens, but, of course, at this season out of flower.

Our time being limited, we made but a hasty run through the Pine-pits, in which are very fine luxuriant plants; and having looked into the Melon and Cucumber-frames, we bade adieu to Fawley, regretting our visit was so hasty, and resolving in our own minds when opportunity offers, to repeat a pleasure which afforded us so much gratification.

THE SPANISH CHESTNUT.

IN reading Mr. Robson's article respecting our ancient forest trees, I thought the following remarks might not be unacceptable to some of your readers. There are to be seen growing, or at least were four years since, at Shrubland Park—the seat then of the late Sir W. Middleton, now of Sir George Brooke Bart.—several much finer specimens of Sweet Chestnut than those alluded to by Mr. Robson. They were growing by the side of a terrace-walk, and though some of them were decaying they were objects of interest to all who saw them. I am not prepared to state their exact size. One of them which I often measured was about 36 feet in circumference at the ground, and I should think that at 5 feet up it was about 21 feet in circumference, as the bottom was very much enlarged.

Some of the largest Oaks I ever saw are growing at Helmingham Hall, in Suffolk, the seat of—Tollmache, Esq.—E. WELCH, Palace Gardens, Armagh, Ireland.

LARGE ELM.—A fine old Elm tree, 25 feet in girth at 10 feet from the ground, is still in vigorous health at the south-east corner of Tooting Common.—H. T.

I SEE in your Journal of last week a paragraph about a large Elm at Bromyard. We have in this garden one measuring 25 feet round at 1 foot 6 inches above the ground, and 20 feet at 5 feet above the ground. It is perfectly sound, and has stood whole in limb against the heavy gales of 1858-9.—H. P. B., Hartlebury Rectory, Kidderminster.

CULTURE OF *DISA GRANDIFLORA*.

ACCORDING to your request I send you the following particulars respecting the course of culture I have practised in growing and flowering *Disa grandiflora*. It is now in bloom here, and a most beautiful flower it is. It has been depicted in the pages of *The Florist and Pomologist* already; but its beauty must be seen to be duly admired.

The soil I used was good sandy peat mixed with bits of charcoal, and the pot was well drained. Although the plant, it is said, does well standing in water, I found ours flourished the best when standing on a pot placed in a pan of water. The experiment had its advantages in two ways—first, the roots were not in stagnant water; secondly, the pan being kept full of water, prevented snails and other vermin from reaching the plant, as it had two narrow escapes from being destroyed previously to using the pan of water. It was watered every morning over the foliage with a rose watering-can, so as to keep the plant clean as well as moist at the roots, and shaded from the hot sun, as it is evident that *Disa* cannot bear the bright sunlight shining upon it without suffering injury.

It was kept in the front of a late vinery with the front sashes open day and night, and only closed when there was any appearance of frost in winter or strong winds.

Although I have not found it as easy to grow as a *Calceolaria*, it may be grown, and successfully, with a little attention bestowed upon it.—J. EASTWOOD, *Gardener to E. Nathan, Esq., Didsbury Lodge, Manchester.*

DISEASED LIME TREES AT PRESTON.

WE insert the following letter from "A LOVER OF TREES," complaining of the diseased condition of a fine avenue at Preston; and as the subject is one of public interest, we have put it into the hands of one of our regular correspondents, whose remarks we append below. At the same time we invite all others having experience in such matters to record it in our pages, as we conceive that trees in a town are too valuable features to be lost without an effort, if by any expedient they can be preserved.

"In Preston we have a beautiful public walk called Avenham Walk, and in it there are two rows of fine Lime trees about 160 years old. These trees are showing symptoms of decay in their upper branches. The walk up to the trunks of the trees is gravel which binds together like cement, and, therefore, prevents the rain from percolating through the soil to the roots. The walk and road round about are also drained, which will prevent the moisture from rising above these drains to the roots of the trees, and to these two causes many parties attribute their premature decay.

"It has been suggested to place six iron boxes round each tree about 6 or 8 feet from the trunk, and at equal distances from each other. These boxes to be 1 foot square, 2 feet deep, with perforated lids, and without bottoms. The gravel walk to incline towards the boxes, so that the rain would enter them and percolate through the soil to the roots. The boxes to be also occasionally filled with liquid manure from the stable tanks.

"The above remedy is suggested with the view of keeping the walk as at present gravelled up to the trunks. Now, will you be so kind as to inform us whether this remedy is worth adopting? if not, what other means must we take to restore health and vigour to these old favourites? By supplying this information you will confer a favour for which thousands will be most grateful.—A LOVER OF TREES."

[It is very difficult to form an opinion that is of much value on a subject like this, without being on the spot, and ascertaining more particulars than those given by the correspondent whose letter is inserted above. So many causes sometimes concur in producing disease, that we are not always right in attributing it to one in particular. The polluted atmosphere of most towns, especially manufacturing ones, is very unfavourable to the well-being of trees; besides which, it not unfrequently happens that their roots are ruthlessly mutilated or destroyed by one or other of the many underground works every now and then executed in streets and public thoroughfares—such as making sewers, water and gas-pipes, and the many works which are necessary for the public good. We once knew a

very fine tree that had been for many generations a favourite with the inhabitants of a town, and it was all but killed by a thoughtless excavation for some purpose or other; the material, a good gravel, being carted away, and the hole afterwards filled up with some waste rubbish from a manufactory of chemical substances, which, as the sequel proved, contained very poisonous matter, and ruined the tree. This, however, is not likely to have been the case with those at Preston; but it is not improbable that the long-continued endurance of an unhealthy smoky atmosphere, or some evil of a like nature, may have been in some measure the cause of the mischief. The most likely cause of all, however, is, that the trees are becoming diseased through old age. The Lime tree, though to all appearance naturalised with us at the present day, is thought not to be indigenous, and, consequently, not so long-lived as some trees that are natives. This opinion I merely put forth as one of the reasons that may be given for the decay of the trees in question. And although there are, no doubt, plenty of trees in more favoured situations older and still healthy, the disadvantages those at Preston suffer from are sufficient to account for their more early decay, on the same principle that the bills of mortality relating to manufacturing towns contrast strongly with those of a healthy rural district. Many other reasons for the declining health of the trees might be advanced; but as they all more or less relate to those given, and, probably, are unavoidable or incapable of remedy, it is needless to follow them out further. Let us, therefore, consider what can be done to prevent a disaster that every one would be glad to avoid.

The ingenious suggestion of our correspondent for supplying moisture to the roots is well worthy of attention in other matters as well as in this, and may, perhaps, be attended with benefit when it is carried out. But the Lime tree is one that flourishes better on dry ground than wet, and in more instances than one we have known trees thrive remarkably well, though their roots seemed sealed up from all access of air or water, by the hard-beaten path by which they were overlaid. On the other hand, an aged Lime tree occupying a moderately moist situation, not by any means a stagnant wet one, is falling fast into the condition you mention: all the upper limbs are dead, and the living portion of the tree has been yearly diminishing, until it now consists of only a few subordinate branches at the place where the main limbs broke from the bole. This tree has been in a state of decay for many years, and most likely in two or three years it will succumb. Now, there are none of the evils spoken of above affecting this tree;—it is near enough water to obtain all the moisture it requires, and, the surface being grass, it receives all the rain that falls from the heavens. One agent alone, doubtless, operates in both cases:—Old age or infirmity will alike tell in all. That some races are destined to outlive their neighbours is undeniable, but that a time is set for them as well as for the others is also apparent.

To ward off the effects of old age requires more skill than perhaps can be brought to bear on the Preston trees, as it is obvious that disease has set in; and it is unlikely that the authorities of the town would like the walk broken up for the purpose of renovating the roots, by placing them in fresh soil, so as to add some additional vigour to the partially decayed trees. Individual specimens are occasionally benefited by as much of the old earth as can conveniently be moved being taken from off the roots, and replaced with fresh good soil. The stimulus thus afforded is useful for a time, and retards decay for a number of years.

Now, what appears the easiest way of supplying additional food to the trees at Preston, would be to try and feed them at the extremity of their roots on the outsides of the two rows forming the avenue. This is on the supposition that the opening between the rows forms the walk or promenade, and the outer side is more accessible. If this should be the case, the removal of part of the soil, and replacing it by fresh, will be attended with advantage. If on the other hand, hard roads bound the trees on all sides, extending as far as the roots are likely to travel, watering as suggested might be adopted, although we have not much faith in its efficacy; but it can do no harm with old trees, and might do good to young ones. If the ground is very dry, and well drained naturally as well as artificially, then I should say,

By all means adopt the plan suggested, and if possible add more water than merely falls by rain for a few times; but do not apply manure water too liberally, as when this fluid is not used up by the plant it is intended for, it sours the ground, rendering it unfit for healthy vegetation. A little with the water in the growing season will be of benefit. Trees in large towns suffer from many causes, as well as from dryness at the roots, and in some instances they are sadly abused, becoming, as it were, receptacles for nuisances, which, though they endure for a time, they eventually suffer from.

That Lime trees are of quick growth and very accommodating as to position cannot be questioned; but, at the same time, they are still liable to the diseases incident to all vegetable as well as animal life; and we fear no treatment that is at all expedient to adopt will prevent this entirely in the case of the trees in question. We are unwilling to believe the want of water to be the main cause, as the trees must receive on their foliage all that falls in a natural way. Is the gravel forming the walk of a pernicious kind—containing some virulent poison fatal alike to vegetation as well as animal life, as we know some sands to be that are obtained in mining in the west of England? In this case it would be difficult to suggest a remedy; and as it is, we fear it is not an easy matter to effect one. The plan advised by "A LOVER OF TREES" might, however, be tried on a few of the trees, and if found to answer might be extended, as it is not likely to do any harm, and may do good. Assuming the roots to be only accessible by such means, it is certainly worth trying; or a more homely way may be adopted as a temporary trial, which is making a number of holes over the ground with a crowbar, sufficiently deep to reach the soil or nearly so. These holes might be frequently filled with water for a few days until the ground be pretty well wetted, and they might be filled-up with but little injury to the walk. If this were done twice during the growing season it would serve the whole year; and if continued from year to year a partial recovery might take place if the cause is want of moisture. I fear, however, that age and infirmity have something to do with the evil, and if so, all severe measures ought to be avoided. In the meantime see if one side of the tree is not available to work upon, and apply the remedies recommended above. If not, then try water; at the same time examine the various things surrounding the trees, and provide, as far as possible, against nuisances, and the leakage of gas-pipes; and perhaps the public promenade may be retained without being much further impaired for some years. Let us know how it fares with these important ornaments to one of the fairest towns in Lancashire.—J. R.]

THE CASTLE KENNEDY FIG.

UNDER this heading in THE JOURNAL OF HORTICULTURE of the 4th inst. "A CONSTANT READER" makes some remarks about the Fig known in this locality as the Castle Kennedy Fig, which he says he has eaten, and does not remember tasting any of better flavour, and expresses surprise that the Fruit Committee of the Royal Horticultural Society did not report more favourably of it.

"A CONSTANT READER" also suggests that I should show it on some future occasion in larger numbers. This I will be glad to do, the more so as I think it is a different Fig from the one the members of the Fruit Committee somewhat doubtfully suppose it to be. In their report they say, "It appears to be the Large White Genoa." I do not here wish to be understood as finding fault with the Fruit Committee's decision, for every one acquainted with fruit knows how unlike some varieties become when grown in different soils and widely varied circumstances.

I purpose growing the Castle Kennedy Fig and the large White Genoa in the same house next year; and if I can obtain fruit ripe on both at the same time, I will show them together, when the Fruit Committee will have an opportunity of testing their respective merits, if different, and proving whether they are the same or distinct varieties.

Here we grow Figs pretty extensively, but no variety is so acceptable at table as this one; its fine flavour, large size, and showy appearance always arresting attention, and

drawing forth favourable comments. This Fig averages from 5 to 6 ozs. when well grown.

It has frequently occurred to me that if this Fig were better known and more extensively cultivated it would become a general favourite, and find its way to the London Horticultural Exhibitions, and probably displace some of the comparatively humble specimens I have frequently seen taking prizes there.

Of late years almost every other kind of fruit has caught the impulse of the age, and been rapidly improved; but somehow this has not been the case with the Fig. Many think that instead of progressing it has been retrogressing. On account of Figs not being fashionable, some of the finer sorts formerly in cultivation have either altogether disappeared, or are only to be found in out-of-the-way places.

As little has been done for the last half-century in raising new varieties from seed, surely a fine field is now open for some one to devote attention to the improvement of Figs by hybridising. Owing to the formation of the fruit no doubt this is a difficult process, much skill and care being requisite on the part of the operator. A taste, by many considered a very refined one, for this most wholesome of fruits is now springing up in all directions, which is causing more attention to be bestowed not only on its cultivation, but also on the selection of sorts, to be followed in due course by improvements on existing varieties.—ARCHIBALD FOWLER.

NOTES ON GARDENS PUBLIC AND PRIVATE.

No. 2.—FARNHAM CASTLE.

It is recorded of one of the former occupants of the lordly see of Winchester, that when he died his successor sued his executors for dilapidations on account of his having thrown down part of the old castle in order to fill up the moat. We are fallen, however, in different times now. Under the liberal generosity, refined taste, and admirable management of its present occupant the grounds of Farnham Castle are in so beautiful a state of preservation, that never in the proudest days of this great see, when belted knights and armed retainers filled its halls, could it, to those who delight in tracing the softening effects of our holy religion, have ever appeared so well worthy of admiration as in these more peaceful times when, its moat filled in, planted and decorated, its very keep displaying the skill of modern horticulture, one can dream over its past history, and think how strangely different were the scenes in olden times enacted beneath its walls.

The position of the Castle reminds one more of that of Arundel than of any other I at the present moment recollect. Situated like it on a gentle eminence commanding the town, which seems to lie nestled beneath its walls for protection, it is the very ideal of an old feudal castle. Surrounded by what was an extensive moat, and closed in by some noble Cedars, it will be seen that the amount of pleasure ground cannot be very extensive: while immediately beyond the moat, and separated from it by a goodly wall, is the noble park with its magnificent timber and lovely walks, by the liberality of the Bishop thrown open to the public; but although not extensive, it has been made the most of. When the present Bishop came to the see this moat was partly choked up with rubbish, and partly a kitchen garden. All remnants of both have disappeared. The portion of the keep has been restored; the moat has been laid down with a lovely sward; greenhouses have been built in the upper portion of it, and everything is kept in the most perfect order.

Taking, as is my wont, an early stroll before breakfast, I reached the top of the square keep. Imagine my surprise to find it all laid out in a beautiful geometric garden, sunk about 3 feet below the level of the wall. All around the sides Roses clustered in rich profusion; while in the centre most of our gay bedding plants were (notwithstanding the dryness of the season, which must tell upon such a situation especially), flourishing admirably. In the centre was a high stand, around which was *Saponaria calabrica*; and the remaining beds were arranged in circles round the centre, although of various shapes. Purple King Verbena (as yet unapproached for this purpose), Lobelias, Cupheas, purple Dahlias, Ageratum, Scarlet Geraniums, Christine and Trent-ham Rose Geraniums, Gazanias, yellow Calceolarias, and

various other bedding plants were used and capitally combined; but at the same time, from what I have seen of bedding-out this season, especially at Linton Park under the able management of Mr. Robson, I am inclined to think that greater effect can be produced by fewer things and with more decided colouring. But of this more at some other time.

The beauty of this Castle parterre did not, however, prevent one from enjoying the splendid prospect that meets one's eye from the summit of the keep. In the foreground was the clean and well-ordered town of Farnham, and around it those beautiful Hop grounds for which it is especially famous; while far away the eye rested on the hills of Surrey and the downs of Sussex, affording one of those rich and beautiful scenes for which the South of England is so famous; and in the still early morning, with the bright sunlight of this most lovely summer, the view was especially enchanting.

Opposite the drawing-room window is a geometric grass garden, composed entirely of Pelargoniums, and it is remarkable how many tints from both foliage and flowers can be obtained in this class alone. The grass itself is beautifully kept, and mown with the scythe. The Bishop's reply on its being remarked to him that he did not use a lawn-mower was eminently characteristic. "The men like the scythe better." It was no question of comparative merit, but their likings. Amongst the gold-leaved varieties, Mrs. Milford, which was raised here, is largely used. I do not know whether the present season is unfavourable for the growth of such varieties, but I have noticed that not only it, but Golden Fleece, Cloth of Gold, &c., have done badly, the lower leaves scorching up, and the plants making but little progress. Christine, Bijou, Golden Chain, and other well-known varieties make up the various shades required.

The greenhouse, stove, Pine-pits, &c., are situated at the upper end of the moat, somewhat in the rear of the Castle, and, as might well be imagined, from the Bishop's well-known taste for and love of Orchids, are filled with rare and choice species. One house, which was full of flowering plants of various kinds, might well be called the Fuchsia-house. The rafters were covered with fine plants of this very graceful flower, and instead of their being allowed to ramble over the whole of the roof, they were confined to the rafters alone; thus forming a dense mass of foliage and bloom. Fuchsias of the best and newest kinds, florists' varieties, white-corrallad and double, were intermingled with well-grown plants of Achimenes, Gloxinias, Gesneras, Amaranths, &c. Among the Gesneras I noticed one, sent out, I believe, by Mr. Bull—refulgens, very beautiful, better than cinnabarina, and an admirable plant for table decoration, the play of light on the brilliant crimson hairs, which so thickly stud the plant, making it an object of great interest. I think that oftentimes a great mistake is made in selecting plants for this purpose; the object ought to be to select such as form a striking contrast to the white tablecloth. Thus variegated leaves or light-coloured flowers will not do. Such plants as this or *Coleus Verschaffelti*, or the graceful *Adiantum cuneatum*, are the most suitable.

Nothing could be in finer health than the Orchids, and, of course, all the varieties and species worth growing were here. But I could evidently see that the greatest interest was felt, and naturally too, in some which had been sent to the Bishop by Mr. Tupper, of Albury, who received them from Rio Janeiro, and amongst them were apparently some hitherto unknown species. Can we wonder that in looking on the growing masses of *Oncidiums*, *Zygopetalums*, and *Maxillarias*, something more than mere curiosity should be felt as to what they might prove to be? Amongst other things I particularly noticed were *Grobya Amherstii* and the curious *Fernandezia lunifera*, and, for those who delight in hanging-baskets, what was to me quite a novelty—it may be well-known to others, although the intelligent gardener, Mr. Lawrence, evidently thought not. It is called *Coccocypselum discolor*, in growth not unlike a *Tradescantia*, but bearing a number of bright ultramarine blue berries which continue a long time upon the plant. The Globe Amaranth was also mentioned as a desirable basket flower.

The Pines were in excellent order, both fruiting and succession, the greater portion of them being, as I generally find, *Quercus* with occasionally a *Cayenna*.

I had not an opportunity of visiting the kitchen garden, which is about a mile distant from the Castle, but I have no doubt it corresponded with the excellent management of the flower garden. I wish very much that I could convey a more accurate notion of the very beautiful and unique character of this episcopal residence, whose well-tended garden and carefully ordered grounds are, I believe, a correct type of the care and order that reign over that more extended and more important garden, over which for five and thirty years Bishop Sumner has presided, a true chief pastor of the Church of Christ.—D., Deal.

AMARANTHUS MELANCHOLICUS—MIMULUS CUPREUS—GOLDEN-LEAVED GERANIUM.

1. CAN *Amaranthus melancholicus* be preserved for next year by being taken up and kept over the winter in the greenhouse? If so, may the plants be put thickly in the pots? and should they be kept dry or moist?

2. *Mimulus cupreus*, after making a brilliant bed for about three weeks, is now with me out of bloom. I understood that it kept the whole season. If I were to cut off the seed-pods, and manure it with tank water, would it blow again?

3. I send leaves of two kinds of golden-leaved Geraniums, as you desired some little time ago. The kind marked No. 1 is what I received two years ago from Mr. Scott, of Crewkerne, as Golden Chain, and some experienced gardeners in the neighbourhood say it is true to name, while others say it is not, and that the variety marked No. 2 is the true Golden Chain. Which are correct? And if No. 1 is not Golden Chain, what sort is it? It is not Golden Fleece surely, as that latter has a leaf very like Tom Thumb in shape, and with only the least little speck of green in the centre of the leaf. *Reine d'Or*, which I obtained this year, is a most worthless variety. It has only the narrowest thread of yellow edging. I should add that No. 1 and No. 2 have exactly the same kind of flower, but quite distinct habits of growth. The accounts given by different nurserymen of Golden Fleece and Cloth of Gold are most conflicting. Many of them state that Cloth of Gold has a deep crimson blossom. What I have as Cloth of Gold has a deep scarlet blossom. Golden Fleece has not yet blown with me.—Q. Q.

[1. We do not think you will succeed in keeping plants now in the ground of *Amaranthus melancholicus* over the winter by taking them up and keeping them in a common greenhouse. Though we have not tried it, we presume you would require a house between a hot stove and a cool greenhouse—that is, a temperature averaging from 50° to 60°, and the plants to be kept airy and not too wet, to prevent damping-off. The trouble and risk, in our opinion, would be too great to be advisable, more especially as by sowing seed in a hotbed in February or March the plants may be grown to a good size before planting-out time. We have not succeeded to our mind with it, but the colour is much richer out of doors, and so soft and pleasing, that we mean to try it more largely next year; but we will grow the plants to a good size, and not turn-out until some time in June when the ground is warm.

2. Like most *Mimulus*, *cupreus* delights in moisture. If you had thinned the beds and removed the seed-pods the plants would have continued to flower. By your proposed plan we expect you will have a fine autumn display.

3. Though you had packed them nicely, yet, unfortunately, the leaves of Nos. 1 and 2 Geraniums were mixed, but they are easily separated. The two leaves with the deep irregular yellow margin are exactly the same as small leaves of our Golden Chain, which we have grown ever since it was brought into notice by Mr. Beaton. The other with the thin edging of yellow—but for your statement that the habits are different—we would also pronounce to be Golden Chain, as we could easily pick leaves from the true Golden Chain closely resembling it, though that with the deeper yellow is the better type of the two. We also grew a variety closely resembling the kind with the thin yellow edge, called Golden Edge, much more robust in habit than Golden Chain, and another sort called Golden Circle, of medium strength between Golden Edge and Golden Chain; but none worth keeping, except for mere variety. But for the difference of habit of which you speak, from the leaves alone

we should say you had two varieties of Golden Chain—that with the broad yellow edging being in our opinion the better. As to the yellow No. 3, we are not sure from a mere leaf what it is, but from a little bed of Golden Chain we picked three leaves as like No. 3 as possible, and from a small bed of Cloth of Gold we could have picked a dozen more like it still. We think the yellow tinge without relief is no advantage, just as a pure white Geranium leaf throws a sickly cast of thought over us. Your Cloth of Gold and Golden Fleeces are both right. For ourselves we prefer the Golden Chain and Cloth of Gold to all others. We have not yet handled Mrs. Lennox—that is said to beat them all. It is hoped it will not be the miffy thing that Sunset is said to be. We think the different accounts of the colour of the flower of Cloth of Gold are quite reconcileable. People do not see these matters alike. We have heard ladies say respecting it, "What a lovely rich crimson!" Like yourself, we consider it a dark scarlet. What would you think of the fact of one of the ablest men in our neighbourhood having no perception of colours whatever, only that by a great effort he can make a difference between jet black and brilliant scarlet; and yet he has a great pleasure in visiting flower gardens, having, we are told, a fine eye for form, and outline, though none for colour? We must not, therefore, expect all persons to see colour exactly alike.—R. F.]

SULPHUR AND THE LADYBIRD AS AGENTS IN THE CULTIVATION OF HOPS.

As a communication in a late Number of this Journal, calling attention to the use of sulphur as an antidote to mildew, may have led some parties to suppose that this useful article to the gardening community may not yet have found its way into the Hop gardens, where mildew in one form or other is attended with such serious results, I am induced to make a few observations on the subject—certainly not with a view to put forth any new doctrine on the matter, but simply to inform such as the worthy writer of the article in question what has really been done in the way of counteracting the baneful effects of mildew in the Hop garden, and the various ideas generally entertained on the subject by those whose extensive practical knowledge entitles them to be regarded as authorities.

Gardeners as well as Hop-growers are alike interested in the efficacy of sulphur when it is applied for the destruction of mildew: therefore they will not be the less interested on finding this useful article used in such an extensive way as they have but little idea of in their more limited cultivation. One thing, however, yill, I believe, be generally admitted—that to the gardening world we are indebted for the first application of this remedy as a destroyer of insect life of a certain class, and of vegetable life of another; and although the last few years have furnished us with various mixtures, adapted, more or less successfully, for the purposes that sulphur and tobacco were put to before, as well as for destroying a class of insects for which these two useful garden helps were ineffectual, it is questionable whether the utility of sulphur as an agent in assisting good cultivation ever stood higher in public estimation than at the present moment. It is not unlikely that its consumption for that purpose during the present season will be greater than that of any preceding one; and that it may be still more extensively used is not unlikely, from the still increasing good opinion entertained of its utility—not that it is an infallible cure, but that it is an important help is very generally, if not universally, admitted.

The precise time when sulphur was first used as an antidote to "the mould" in Hops, as the mildew is locally termed, I have no means of ascertaining; but it was in very general repute about twelve years ago for that purpose. Unfortunately, soon after that time a report reached the Hop-growers that buyers of Hops objected to its use, and that Hops from which a warrant could not be had that no sulphur had been used in their cultivation could not be received in the market. This imperious edict restricted its use, excepting amongst those sufficiently wealthy to brave the effects arising from it; while, perhaps, some used it unknown to the great Hop-monopolists of the Borough, who

sought to confine them to the old channels of working. At the same time scientific men came forward to prove the absurdity of believing that sulphur used in the early stages of a plant's existence injured it for the purposes for which it was wanted in a more advanced state; but somehow, in their zeal to assist the Hop-grower these men of science went a step too far, and asserted the unfailing efficacy of sulphur as a cure for the mildew in all cases. This having been found not to be the case the remedy fell into some disrepute, until it has during the last few years again been brought forward, and its utility as a preventive in many, but not in all, cases may be now generally acknowledged. At the same time the mode of using sulphur has received due attention, and machinery suitable for applying it has been extensively sought after, and improvements effected to an extent which in the best-constructed apparatus leave as little to be wished for as there is in the best-constructed mowing machine.

The injurious effects of the sulphur on the leaf of the plant having been proved to be only a myth, and the edict forbidding its use either withdrawn or no longer acted upon, while the application of it at a late period of the Hop-growing season is so easily detected, sulphuring now may be said to be confined to the months of June and July, and rarely the first week of August in very late places.

It is not necessary to enter here into all the minutiae of the Hop-sulphuring question; suffice it to say that machinery for dusting the plants with powdered sulphur has undergone many improvements. Some years ago it was administered mixed with water; when a sort of syringe, which eventually grew into the proportions of a moderate-sized fire-engine, was used. More recently sulphur has been applied in a dry state by the aid of fan-blowers, something in the way of a corn-winnowing machine. This contrivance is drawn forward by a horse, the sulphur being blown upwards amongst the foliage of the plant as it passes along. That much of the sulphur falls on the ground cannot be avoided; but its virtues in counteracting the evils of "mould," or mildew, are so generally acknowledged as to induce almost all who have the means to adopt the remedy if the disease makes its appearance.

Some little circumspection is required in the application; and this leads us to the consideration of the second remedy for a Hop complaint mentioned by Mr. Major, page 53—the "ladybird" as he calls it, or what is more generally known here as the "fly golding," an insect encased in a sort of red jacket, which Nature has kindly sent to prey upon the aphid or "Hop fly," which, if unchecked, is an enemy not less fatal to the Hop crop than the mildew.

Now, it not unfrequently happens that the mildew follows an attack of the aphid, and as sulphur has been proved to be hurtful and often fatal to the fly golding or ladybird which preys on the aphid, its application requires consideration before it is made.

That the fly golding is an insect-destroyer has been known, I believe, for nearly a century, and those who benefit by them are naturally unwilling to assist in their destruction even when they invade the home premises, which they invariably do in winter, taking up their quarters in the crevices of walls, or filling up the moulding of a window-frame or other places. Their after-utility is so generally acknowledged as to shield them often from destruction in places where their presence is anything but agreeable.

I believe I am right in saying, that upwards of half a pint of these pretty little insects have been found lurking behind the moulded frame of an ordinary window-shutter. Now, as the fly or mildew as evils to the Hop-grower vary in magnitude according to circumstances, it remains for the grower to determine which is the worst one; and if the aphid be increasing and following the young shoot as it is formed, it behoves him to encourage rather than destroy its natural enemy. If, on the other hand, mildew predominate, a good dusting of sulphur is the remedy and is generally applied; and as no crop is more jealously watched than that of the Hop, a practised hand can see at once what is the matter at the time he examines it, whilst the most far-seeing amongst the whole fraternity have nothing whatever on which to base their judgment as to what may be the ultimate result beyond merely guessing. The close observation made enables them to tell at the

moment which of the two evils just alluded to is or has done most mischief.

No plant that I am acquainted with varies so much in its general growth, and certainly none is so little under the control of the cultivator, his best-directed efforts sometimes resulting in a complete failure, while at other times a good crop rewards very indifferent management. So exceedingly capricious are some of the results of Hop-growing, that the diversity of opinion on the matter is not to be wondered at. It is very fortunate for mankind that the more important cereal crops are more steady and to be depended upon, or serious consequences would follow; and although when we arrive at the full extent of chemical knowledge bearing on cultivation, so as to be able to supply the plant with the material most wanted to insure its doing well, the atmosphere still remains an all-important agent which we have no prospect of ever having any control over. It is, therefore, our duty to protect and encourage all Nature's cures or preventives bearing on the maladies of plants cultivated for our use: consequently, the fly golding, being one, is protected by all those benefited by its presence.

While on this subject I may as well state for the information of those who may be disposed to urge the claims of tobacco as a destroyer of the aphid on the Hop plant, that it has been applied for many years with more or less success, and an extensive grower near here (Linton), annually uses several hundred pounds of it for this purpose. A decoction or infusion mixed with soft soap has been found very beneficial in destroying the aphid; but the fact of its destroying the fly golding also has made some parties timid in using it. One benefit, however, arising from its use, instead of allowing the plant to become quite blighted for the season, is the much healthier condition the plant is in the following year. There is, however, a greater mystery hanging over the well-being of this plant—an attack by the aphid in the following year is an exceedingly rare occurrence. In fact, the oldest Hop-growers declare such has never occurred, while a succession of three or four seasons of mildew is not at all unlikely. Can any of our physiologists account for this?

It is, therefore, very satisfactory that a conviction of the utility of sulphur as a preventive of the mildew has been brought about; and as it is a cheap and easily-applied remedy, hopes are entertained that one of the worst evils Hop-growers have had to contend against will be much mitigated, and to a certain extent placed under control. The subject, however, is one calling for further comment, and I will at a later period of the season again revert to it. In the meantime, for the information of those who read newspaper paragraphs recording the ravages of the fly, or the destruction by mildew, and who may, perhaps, think they are conferring a boon on the Hop-growing community by advising the old-fashioned remedies used in garden structures. I may state that Hop-growers are in no way behind their neighbours in enterprise, either in that way or in the application of manure of various kinds. J. ROBSON.

NECESSITY OF NAMING PLANTS IN PUBLIC GARDENS.

YOUR correspondent, Mr. Keane, shows that even in those splendidly-kept gardens at Kew, the authorities give the public more credit for knowledge of the names of plants and horticultural matters than they deserve. The truth of this I have myself confirmed in my strolls into Battersea, Kensington, and other public gardens this season. In Battersea Park I saw a gentleman taking much interest in the colours of the bedding plants, and the effects they produced. Being desirous of obtaining the name of a plant, in order, as he explained to me, to be able to plant his own garden, he went over the stout iron hurdles to read the name which was written upon a small garden label, such as we generally find in our pots of greenhouse plants, but before he could read it up came a man with a Crimean medal, hat-band, &c., calling out, "Come out there!" The gentleman told him he wanted to ascertain the name of the flower in the bed, and asked, "What is it?" The answer was, "I don't know, and if you don't come out immediately I shall take you into custody. These are my orders, and I shall assuredly carry them out."

Next, in Kensington Gardens, the same kind of park or garden keeper was asked the name of a tree that happened to be an English Yew, likewise the age of the tree. The information I heard him give was, that the oldest Yew tree in this country was not over 150 years old, and that the Yew was first brought to England 150 years ago. The next question was, If Kensington Gardens in the long walk did not contain a good collection of hardy plants? "Yes, the best collection in the world," was the answer. "But why do you not put the names to them, then, so that all persons can see what they are?" "Don't know."

At Kew, on the 8th, I heard several persons ask, "What is the name of that plant? it is very beautiful;" also in the arboretum, "What is that plant?" I thought all the plants at Kew were correctly named. This confirms Mr. Keane's remarks, that the public do not know so much about botany and horticulture as they require to know.—JOSEPH NEWTON, 30, Eastbourne Terrace.

GARDENERS' BENEFIT SOCIETY.

I WAS greatly pleased to see a communication in your Journal from "St. A., Notts," respecting a proposed Gardeners' Society. I merely wish to indorse his opinion of the Gardeners' Benevolent Institution, as I was lately solicited to become a subscriber to it; but on taking the rules into consideration and consulting two or three brethren of the craft, I came to the same conclusion as your correspondent—namely, that it is a most uncertain mode of obtaining a very uncertain benefit (that is, relief in sickness and old age). I shall, therefore, be pleased to hear of the speedy formation of a Society on the plan proposed in a former Number of your paper, and I shall have great pleasure in becoming a permanent subscriber. I will also give my mite towards the necessary expense of formation on being communicated with, and I will use my utmost endeavours to induce my friends to do likewise.—H. B.

THE CULTIVATION OF HEATHS.

BY THE LATE MR. JOSEPH FAIRBAIRN, NURSERYMAN, CLAPHAM.

I SHALL content myself, in this communication, with treating on what may be termed the elementary parts of cultivation, included under the heads of Selection of Soil, Choice of Plants, and Shifting or Potting the same, as it is my wish, in the general instructions I venture to offer, and which are the result of careful observations, arising from a rather extensive experience, to be as definite as possible, confining myself to a plain, and I hope clear and explicit, demonstration of facts.

First, as to selection of proper soil,—without which every effort, however well directed, and perseveringly followed up, will prove an abortion. The best criterion with which I am acquainted is to obtain the soil from a locality where the wild Heath grows luxuriantly, taking care that it is not dug too deep; the turf certainly not to exceed 4 inches, less rather than more, as, if deeper than that, it is more than probable that the good and nutritious upper soil will become deteriorated by an admixture of inert and mischievous sub-soil. The summer months are the right season to procure and store up a heap, which may safely be used after having had a summer and winter's seasoning.

The next matter of importance is the selection of healthy, dwarf-growing, robust plants, taking care to avoid anything like meagre, leggy, stunted plants, which may live for years (if life it may be called), but would only make a specimen calculated to disgust rather than delight the cultivator.

As regards the operation of preparing the soil for potting or shifting, the soil should be cut down from the heap, so as to disarrange it as little as possible, breaking the lumps well with the back of the spade, and afterwards rubbing the soil through the hands, which is far better than sifting, leaving much more of the fibrous decomposing vegetable matter in it; add to this one-fifth of good pure white sand, and well incorporate the two materials together.

Lastly, the operation of potting or shifting. Although not an advocate for what is called the "one-shift system," still, to convert a plant into handsome, well-grown specimen, in a moderately short space of time, recourse must be had

to a liberal shift; and, to avoid anything that may appear indefinite, I would instance what I mean by a liberal shift. I would say, that a young plant in a 60-sized or four-inch pot may prudently be shifted into a 24 or nine-inch pot, taking care that plenty of potsherds are used for drainage; and in the case of larger-sized plants, pieces of sandstone and pebbles may be used. Care should be taken that the soil is well fixed by pressing with the fingers, in the fresh pot, all

round the ball of the plant, so as to make it quite firm and close. After being set away in a cool frame or pit, let them be well watered; all this is much facilitated by placing a convex potsherd over it, and watering with a spout, leaving the water to diffuse itself equally over the whole soil, which is a means of avoiding what frequently occurs from watering with a rose—namely, the surface only becoming moistened, while the ball remains imperviously dry.



Specimen Erica vaseiflora.



Specimen Erica elegans.

I will proceed now to give a list of the best kinds to select for spring, summer, and autumnal flowering:—

SPRING-FLOWERING HEATHS.

Aristata.	Linnaeoides.	Vernix.
major.	Neillii.	coccinea.
Andromedaeflora.	Sindryana.	Westcottii.
Arbuscula.	Rubra-calyx.	Willmoreana.
Floribunda.	Sanguinea.	Smithiana.
Grandinosa.	Sparra.	Ovata.
Himalia.	Templeae.	Persoluta rubra.
Lambertiana rosea.	Tenella.	Regemina.
Linnaea.	Transparens nova.	

SUMMER-FLOWERING (JUNE TO AUGUST) HEATHS.

Altoniana.	Humeana.	Sprengelii.
turgida.	Inflata.	Tortilliflora.
Ampullacea major.	rubra.	Tricolor.
rubra.	Infundibuliformis.	Dunbariana.
elegans.	Irbyana.	elegans.
Randonceana.	Jasminiflora alba.	Wilsoni.
Beniamonia.	Jasminoides.	Wilsoni superba.
Bergiana.	Jacksonii.	Wilsoni coronata.
Cavendishiana.	Lawrenceana.	Vaseiflora.
Cerinthoides.	M'Nabiana.	Ventricosa.
stricta.	Massoni.	coccinea.
Clewiana.	Metuliflora.	minor.
Denticulata moschata.	bicolor.	Bothwelliana.
Depressa.	Mirabilis.	grandiflora.
scrobicula.	Mundula.	splendens.
Elegans.	Mutabilis.	hirsuta rosea.
Eusebiana.	Murrayana.	alba tineta.
Erbia.	Obbata.	Vernoni superba.
Festigata luteo-cens.	Parmentieri rosea.	Vestita alba.
Ferruginea.	Perpicua nana.	alba grandiflora.
Foveoides elegans.	Propendens.	coccinea.
Fucida.	Retorta.	rosea.
campanulata.	major.	Webbiana.
Myrtellii.	Shannoniana.	Westphaligina.
nana.	Splendens.	

AUTUMN AND WINTER-FLOWERING HEATHS.

Archeriana.	Mammosa.	Verticillata major.
Banksiana purpurea.	major.	Vestita alba var.
Colorata.	Nitida.	Sebania lutea.
superba.	Picta.	rubra.
blanda.	Princeps.	Gracilis.
Exurgens.	carnea.	cernua.
coccinea.	Pyramidalis.	Rubens.
Incrinata.	Sanguinea.	Carniola.
Bowieana.	Taxifolia.	Ollula.
Longipedunculata.	Vermix ovata.	

From the foregoing sections, whether for exhibition or for general culture, varieties may be selected, that will furnish flowering plants for the whole year.

Heaths like plenty of air; it must be given freely, but carefully; as, from exposure to the dry, arid, cutting winds, plants that are growing freely are apt to get a rustiness that will so disfigure them, that months will elapse before they are free from it. If the plants are in pits or frames, it is well to open the lights on the contrary side to the wind, which will effectually prevent the rush of cutting wind, and thus shelter the plants; at the same time that it is quite efficient for the purposes of ventilation. With respect to the plants grown in the heathery or other houses, it will be well, during the continuance of cold winds, to close the doors to the eastward, and admit air but sparingly from the front sashes, taking care to let down the top lights so as to insure a free circulation of air. When the plants are in full growth, and the weather is of a parching character, it will be necessary to look them over every day, and water freely, taking care that none may be allowed to suffer for want of it, which, at this stage, would prove destructive of the flowering of the plant, if not of its life.—(Gardeners' Mag. of Botany.)

ROYAL HORTICULTURAL SOCIETY.

AUGUST 11TH.

FLORAL COMMITTEE.—A meeting of this Committee was held in the Society's gardens at Chiswick. A large number of the members attended to inspect the various bedding-out plants which, by the courtesy of several nurserymen, were sent for probation. A first-class certificate was unanimously awarded to a seedling scarlet Pelargonium brought by Mr. G. Smith, Hornsey Road. This is one of the finest varieties yet raised, producing large massive trusses with bright scarlet salmon-shaded flowers, over which a soft purplish tint is occasionally visible. It will make a first-rate pot plant.

Certificates are not awarded by the Committee to plants grown in the gardens; but their merits are recognised by marks, one denoting commendation; two marks, second-class certificate; three marks, first-class certificate. Scarlet Pelargonium *Roi d'Italie*, presented by Messrs. Low, a light rosy scarlet, received three marks; Pelargonium Cheshire Hero, orange scarlet, two marks; Pelargonium Vulcan, a darker shade of the same colour from Mr. Wills, two marks. The class of *Nosegays*, so useful for bedding purposes, and producing great effect from mass of colouring, were carefully examined. *Stella*, the brightest scarlet, so well known for its large compact trusses, had three marks; Lord Palmerston, the same as Dwarf Crimson Nosegay, one mark; Merrimac, dwarf habit, bright carise, two marks.

Lobelia Paxtoni (Downie, Laird, & Laing), a very distinct and beautiful variety, white ground, margined with light blue, received three marks; *Lobelia speciosa alba* (Carter), a nearly white variety, two marks; *Tropaeolum* dwarf, King of Tom Thumbs, a very bright scarlet (Carter), one mark.

Verbena General Jackson, two marks; *Verbena Rugby* (Mr. Wills), two marks; *Verbena Comte Bernard Lechi*, one mark; *Gloire de Curé*, two marks; *Madame Montigny*, two marks. There were many other promising varieties not in condition to be noticed.

Among the annuals *Athanasia annua*, not a new plant, noticed for its bright tufts of yellow flowers, with narrow foliage resembling the *Senecios*, three marks; a very useful annual continuing in flower till very late in the season. *Helianthus argyrophyllus*, a single-flowering Sunflower, with white hoary foliage which makes the plant very conspicuous at a distance, especially when waving in the wind; a very ornamental shrubby plant, one mark. A collection of mixed dwarf *Leptosiphons* from Messrs. Carter were much admired; also *Helipterum Sandfordii*, a plant producing everlasting flowers, which was awarded a first-class certificate at the July meeting.

The *Antirrhinums*, and *Pentstemons*, and *Phloxes* were received so late in the season that they were not in condition for examination. The *Hollyhocks* were scarcely sufficiently in flower, and will be visited again.

The following among the collection were noticed and marked:—*Mrs. Oakes*, 1; *Alice*, 1; *Beauty of Dysart*, 1; *Violette*, 1; *Miss Nightingale*, 1; *Flora Macdonald*, 2; *Lady Dacre*, 1; *Vesper Bell*, 1; *Illuminator*, 2; *Gem of Yellows*, 2; *W. F. Edgar*, 1; *St. Clair*, 1; *Purple Prince*, 2; *Mr. B. Cochrane*, 2; *Golden Fleece*, 1; *Dulcis*, 2.

The Committee were pleased to find that varieties among the various classes of scarlet and variegated Pelargoniums which they had on previous occasions examined still maintained their character, and there appeared no reason why any former decisions should be reversed.

Among the Scarlet section and its various shades of colour, *François Chardin*, *Little Major*, *Herald of Spring*, *Adonis*, *Lady Rokeby*, *Lord John Russell*, *Paul l'Abbé*, *Prince of Hesse*, *Spitfire*, *Vivid*, *Monsieur Martin*, *Attraction*, *Sheen Rival* were specially noticed; among the Variegated section, *Flower of Spring*, *Fairy*, *Burning Bush*, *Fontainebleau*, *Mrs. Lennox*, *Koh-i-noor*, *Mary Ellen*, *Meteor*, *Jane*, *Annie*, *Venus*, *Variegated Nosegay*, *Picturatum*, *Argus*, were much admired; and in the Golden Variety section *Mrs. Pollock*, *Sunset*, *Golden Chain*, and *Golden Harkaway*.

There was a unanimous feeling of regret expressed by the Committee present that nothing has been done to induce the Fellows of the Royal Horticultural Society to visit the gardens at Chiswick. Much more information might be acquired by seeing the plants growing and bedded-out than by any description of their merits. Plants specially useful

for certain purposes and for effect could be selected, and amateur could choose for himself among the endless varieties such as would be suitable for his own purpose and the garden. The pyramidal Pear trees alone are worth the journey to the gardens. Most of them are well covered with fruit, are most admirably trained. The large vinery is a mark of good cultivation, the Grapes are fast colouring, and crops very abundant. It would be difficult to find any building in England containing so many varieties of Vines in such excellent condition. Those amateurs who complain that they cannot grow fruit in pots would do well to visit the orchard-houses in these gardens. They will find specimens of Peaches, Nectarines, Pears, Plums, Apricots, Apples, Mulberries, and Cherries, all in full bearing, the plant in robust health.

Alas! that the poor Chiswick Gardens should be so spiced and forsaken when they still manifest such evident proofs of usefulness, and considering the limited number of hands employed, great merit is due to Mr. Eyles and assistants that so much is done. Oh! that there might be one small ray of hope left for the Fellows of the Horticultural Society, in the true acceptance of the term, that ruinous, costly, and most unsatisfactory gardens at St. Kensington should be resigned into the hands of Government, or Commissioners, or whoever would kindly take them, and the true legitimate purposes of the Horticultural Society be again resuscitated and brought into full vigorous action in the old time-honoured gardens, so admirably adapted for carrying out its interesting work.

P.S.—I find in the last Floral Committee's report, awards made to *Clematis Jackmanii* and *Clematis recta* were omitted. First-class certificates were awarded to both varieties.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE destruction of weeds should always be considered an obligation due to the crops as well as the soil, the efficiency of performance of which is weakened by delay. *Basil*, to be used in the kitchen, should be sown in the open ground, and also *Marjoram*, and dried just as it is coming into flower. *Carrots*, make a sowing for early spring use on a light, lying piece of ground that is only moderately rich. *Cucumbers*, if seed was not sown last week, it should not be done, and another sowing should also be made in about a week. In favourable situations the latter will be enough, no advantage being gained by having the plants very forward before winter. *Celery*, if it has been well plied with liquid manure, which has been very necessary during such a season of drought as the past, some of the early crops will now be sufficiently advanced for earthing-up. This should be performed on a dry day. Remove all superfluous and useless leaves, and tie each plant separately with a string of matting to prevent the earth from getting into the heart of the plants. The earthing-up may then be proceeded with in the usual way, taking care to loosen the soil about the roots of the plants. If they have a good supply of liquid manure the day previous it will be of great advantage. These remarks will, of course, apply to each crop as it becomes ready for earthing, which should only be done in the case of early and main crops about three weeks before they are required for use. *Dwarf Kidney Beans*, these *Scarlet Runners* should be kept well gathered, as, if allowed to perfect seed, most of the later blossoms will prove abortive. Unless a good supply of rain comes about watering and surface-stirring must be followed up among all the growing crops. *Endive*, make a last sowing for use. Continue to transplant from former sowings if the weather is favourable. *Lettuce*, if a sowing of various sorts to stand the winter was made during the week, another good sowing should be made in the early part of the present one. The former will do for transplanting in the autumn, and the latter may remain in the seed-bed to be transplanted in the spring. *Mushrooms*, collect an abundance of horse-droppings for making a bed. Keep the drop spread thinly in a dry airy shed, and turn them frequently for unless they are well dried it is difficult at this season to prevent the bed heating excessively; and this should be guarded against, as it exhausts the manure, and then

is only a poor chance of a good crop. Onions, keep the main crop well turned about to put them as soon as possible in a condition for storing. Spinach, the winter crop to be now sown, if not done already. The Flanders variety is worthy of more general cultivation. Although the sowings above recommended will not admit of much delay, nevertheless, it will be nearly useless to sow without watering and shading. If such cannot be conveniently done, the various sowings may remain over till a change of weather takes place. Continue to water all the crops that will receive actual injury without it.

FLOWER GARDEN.

Look over rock plants, pruning back any that are overgrowing choice ones, in order to give them sufficient time to break again before autumn. Put in cuttings of choice kinds, such as *Saponaria ocymoides*; *Onosma taurica*; *Linaria alpina*; *Phlox nivalis*, *setacea*, *subulata*, *aristata*, *amona*; *Linum flavum*, &c. Plant into borders *Dianthus superbus*, single Wallflowers, Sweet Williams, Canterbury-bells, Mule Pinks, &c. Keep such plants cut back as have a tendency to overgrow Box or other edgings. Tie Dahlias, Sweet Peas. Peg down a few shoots of Chrysanthemums for laying in small pots; this is better done after the shoot has turned up at the point. Large evergreens intended for autumn removal should be prepared for the purpose. A trench should now be dug round the tree nearly to the depth of the lowest roots: the advantages attending an early preparation of this kind are manifest. Propagate Hollyhocks by cuttings. Mark good seedlings, digging up all single and semi-double varieties. Attend to the destruction of weeds by hoeing and hand-picking. Tie-up climbers. Dress the edges of beds by pegging or tying. The beds and transplanted things to be liberally supplied with water in dry weather.

FRUIT GARDEN.

It is advisable now to go over the trees and to stop about half the shoots, beginning, of course, with the strongest; for a general stopping at this time would probably be of little further service than to induce the production of a mass of useless spray, whereas stopping the stronger shoots or those which incline to grossness, will divert the sap into the weaker ones, which will be strengthened, while the buds on the shoots that have been stopped will become full and plump without starting into growth. The only effectual method, however, of curing a gross habit of growth when this is the case in ordinary seasons is root-pruning, or keeping the roots within proper limits by means of shallow well-drained borders; and should it be found that the shoots after stopping incline to start into growth it will be advisable, as soon as the fruit is gathered, to open a trench at a moderate distance from the stem of the tree, cutting the strongest roots. This will be of the greatest service in checking growth, and will probably do more towards securing ripe wood than anything else that could be adopted.

GREENHOUSE AND CONSERVATORY.

Plants that are required to bloom late in the autumn and in winter should be repotted and their growth advanced. Chinese Primroses and Chrysanthemums are of this class. The latter should be stopped and tied out, so that fine bushes may be produced. These are of sterling value in the greenhouse and conservatory until almost winter, and nothing is so likely to bring them into disrepute as badly-cultivated specimens. Plants for next winter's forcing should now be seen to. Pinks, Pelargoniums, and similar plants require to be well established before forcing. The roots should quite fill the pots. Look sharply out for mildew on *Boronia*s, *Gompholobium*s, &c., and where you perceive the slightest speck dust the plants liberally with sulphur. Roses, Lilacs, and other plants for forcing must also be examined, and such as require it should be repotted, afterwards plunging the pots and watering when necessary. Continue to look over climbers, borders, &c. Large specimens which have been placed out of doors to provide room for other plants will soon require housing. This, however, will depend greatly on the weather.

PITS AND FRAMES.

Some of the first-struck cuttings will now be fit for potting-off; place them in a pit or frame, shade and keep them close until they are rooted, when they should be set out to shade, previous to being stored up for winter. Continue to

put in cuttings, more especially the best kinds of bedding Pelargoniums, which ought to be struck as soon as possible.
W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Importance of Clean Water for Labourers' Homes.—We have here a continual struggle with dryness, and are now pretty well at our wit's end to keep things alive. Shaded Celery with laurel boughs; must do so with Cauliflower, or the parlour table must suffer. This hot searching weather, bad as it is for our vegetables, in spite of surface-movings and all the rest of it, is still much worse for the cottagers in many places, who are so destitute of good water as to be obliged to buy what little clear water they can. We are not sorry, from the mass of correspondence sent us on the subject, that the worse than carelessness of building cottages for the working people, and providing no means of pure water for them, is beginning to be looked at as it ought to be. What we have witnessed this summer makes us feel anxious that such true noblemen as our Shaftesburys, and those who may worthily wear the mantle of the late benevolent Lord Herbert of Lea, would try and do something to insure that those who secure the rents of cottage property should be constrained to provide them with the means of health and cleanliness in the shape of pure water. We are well aware that in such a peculiar season ordinary means may break down, and a kind proprietor may be much vexed at witnessing what he cannot remedy. But what are we to think of the selfishness that builds cottage property and takes high rents for it without the slightest provision for water of any kind, leaving the tenant to do the best he can with the pools and puddles that in a moist season will collect by the sides of the highway? The proprietors of this serial have done much to encourage gardening, cleanliness, home comforts, temperance, and industry amongst the working classes. Let them add to the boon by agitating, in unison with their coadjutors, the importance of a fair allowance of pure water for every cottage home.

Sowed Lettuces for standing the winter, and just a pinch of Cauliflowers. Defer sowing the main lot of the latter until the end of August and the first week or ten days in September. If the plants are large they are apt to bolt and button during the winter. Watered Cabbages almost fit for putting-out, or at least pricking-out. Will sow a few more Cabbages, Savoys, Red Cabbage, &c., to stand the winter and come in early in the summer, to be planted in spring. After the end of the month and in September prefer sowing Lettuces on a hard surface and merely covering the seed—they will stand the winter all the better. Onions are just coming up. Will sow a few more, chiefly Tripoli and Silver-skinned—the latter makes a nice Onion in spring. Went over Kidney Beans, cleared off all those under protection as first crops, gathered others close for pickling, and removed every pod on the general crop that was swelling hard for seed, as one such pod with the seeds formed and swelling to ripening-point will exhaust the plant more than a dozen pods fit for parlour or kitchen use. No pod ought ever to be cut for use if it will not break across readily. If it hangs in the breaking process we may rest assured it will never eat crisp and nice. It is best to err on the safe side, and never allow one such to be in the dish. Thinned and regulated Tomatoes, Vegetable Marrows, and Cucumbers. Took up early Potatoes as stated the other week. Took up large Onions, laid over the necks of others with a rake, and would have watered many crops, as Peas, but could not obtain water to do so.

FRUIT GARDEN.

Watered as we could, so as to prevent flagging. Vines, Figs, Peaches, Nectarines. Pricked out runners of Strawberries; watered those potted with dung-water. Find that though rather late the roots are filling the pots fast. Owing to scarcity of water, slightly shaded orchard-houses with a little chalk and water thrown on with the syringe, the water being merely whitened. Was obliged to find water for small pots of Plums, &c., after having top-dressed them with rough material to keep the moisture in.

These and Cherries have done the best with us in pots this season, though there are some little trees that are densely loaded—too densely loaded—with Nectarines. If we suspected that the next summer would be as dry as the present we would turn all these pot plants out, and give them a little root-pruning as they needed it. When confined to pots there is a good quantity of water wanted, but when planted out they are comparatively independent in a few weeks of dry weather. Commenced nipping a second time shoots of Apple, Pear, &c.; and tying up and thinning the fruit on dwarf Pear trees, as the weight is bringing the branches to the ground as if these were unable to sustain it. The extreme heat is ripening Gooseberries too fast, though still they are very good, and we trust those on the north aspect will remain so for a long time. Gathered Morello Cherries for brandy; netted others, or there would be none for tarts, &c. Fastened in Figs closely out of doors, and removed or shortened a few leaves, in order that the fruit, though somewhat shaded, should at the same time have a fair amount of sunlight, and thus gain flavour as well as size. Have had some good fruit from pots in orchard-house, and these with those out of doors generally make up the gap between the first and second crop in the Fig-house. Have next to lost a splendid Elton Cherry tree that generally yielded us a dish of fruit every day for six or seven weeks. The tree is old, and we watered as much as we could to help to save it; but some large limbs have gone, and we fear all are going. A young tree of the Florence seems also going, and we believe entirely from dryness at the roots. Singularly enough, notwithstanding the dryness of the season and the heat combined, we have as yet been little troubled with wasps. But of all sorts of flies, moths especially, in the evening, and the myriads of butterflies in a warm sunny day, we never recollect seeing anything like so many. We suspect that the latter will leave their marks on the whole Cabbage tribe in the shape of numberless caterpillars. We notice that already some Brussels Sprouts are pretty well holed with them. Picking them off and syringing with clear lime water are the best remedies. The wasps and flies have done little injury to the fruit as yet, but it is best not to boast too much before we are out of the wood.

ORNAMENTAL DEPARTMENT.

Very much the same as last week. Fretting a little at the continued dryness, as every plant and bed is far too dry for healthy action. However, it is of no use grumbling. If it were only the present we would not grumble about it, as perhaps flower gardens never looked better. Our Scarlet Geraniums are in first-rate condition, and Calceolarias, &c., are as yet fine, though we have some doubts as to their continuance. Much labour has been bestowed on them last week, so that no earth, dirty leaves, dirty foliage, &c., should be seen; and, at last, we suppose we must join with hundreds in saying the many beds as a whole never looked better. At a future time we may mention those combinations of beds that seemed to give the greatest amount of pleasure to the largest numbers, if we may judge from the use of note-books; but for some time we will be too busy to go very much into detail. Meanwhile we may say that we have seen no class better pleased, nor one from whose taste we have received more help in the way of combining, contrasting, shading, &c., than those who have studied colours and their arrangements as drapers, or assistants in their establishments. We once had a somewhat sneering letter sent us because we had recommended those who had a chance to study the arrangement of drapers' windows in London and other large towns. It is good to pick up fresh ideas from this source, and after all the sneering and merriment we consider that much may be learned in the way of arrangement from these windows. A manufacturer the other day, who had once been a draper, on admiring some beds and the arrangement of colour, exclaimed—"Why, even a draper of first-rate taste could not have done it better!" Of course we took it, as it was seriously meant, to be a very high compliment; and we mention it that our young men may not fear about taking a stare at a draper's window. We are sure, if we had the opportunity of doing so more and reasoning on what we saw, there would be more beauty, taste, fulness and variety in our flower gardens. R. F.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers.

POLYSTICHUM AND DAVALLIA LOSING THEIR FRONDS (L. B.).—We have experienced the loss of the fronds of *Polystichum coriaceum*, *Davallia canariensis*, *D. bullata*, *D. dissecta*, *Polypodium appendiculatum*, and were at a loss to account for it. We tried all sorts of schemes, but without any apparent remedy for the evil having been obtained. Our plants are in a cool greenhouse, planted out as in your case, and by comparing the growths of the species above named in a stove fernery adjoining, we came to these conclusions:—That they require less shading than most Ferns, that moisture or dew on the fronds caused them to turn black and die-off, and that they would stand more drought without flagging than any Fern we had, and we had between five and six hundred species. We removed the stagnant moist atmosphere by giving air in the place where the plants were growing, and kept the fronds less shaded than before, and our plants soon commenced to thrive. This year they were doing the same until we resorted to the means named above, and we are happy to say they are now flourishing. *Polystichum coriaceum* and *Davallia bullata*, at the best, seldom succeed in a cool greenhouse; though they do well in a winter minimum of 45°, yet in one often nearly at freezing they remain too long inactive, and have not time to make their growths during the short summer of a cool greenhouse fernery. They should be planted in the warmest and driest part of the fernery, and every available means taken to prevent stagnant air surrounding the plants and dew lodging on the fronds. We have wondered too that *Lygodium scandens* is not more generally cultivated; but many have never had *L. scandens* true, which is a rapid grower, and will soon cover a trellis. We have had it on a rafter nearly 20 feet long in one season. *L. palmatum* is often confounded with *L. scandens*, the former of which, although very handsome, is rarely seen above 6 feet in height. All the *Lygodioms* are as elegant as *Gleichenias*, and form beautiful objects on pillars, &c. In fact, without *Lygodioms* climbing up pillars, *Stelochlenas* running on walls, and Mosses growing out of cracks and crevices everywhere, a fernery is robbed of some of its finest ornaments.—G. A.

AMARYLLIS BELLADONNA CULTURE (W. W.).—Instead of plunging your plants out-doors under a south wall, we would place them under glass in the full influence of the sun to complete their growth, and then gradually reduce the amount of water at the root, and let them have a season of rest by keeping them dry and cool. After that, by introducing into a higher temperature, you will be likely to make them flower. Avoid any excess of water at the roots at any time; and let them have the full blaze of the sun when making their fresh leaves. Under such treatment they should flower with certainty.

UNDERGROUND GRUBS (Beta).—They are the larvae of the daddy long-legs, *Tipula pratensis* or *T. quadrifaria*. They are called by many local names, such as "terry trumps" near Cheltenham, but gardeners usually name them "surface grubs" and "leather-jackets." Nitrate of soda (cubic petre) is said to kill them, and lime certainly will; but we examine the soil round the stem of a Cabbage or Lettuce the bark from the stem of which they have eaten, kill the grubs, and insert another plant.

STRAWBERRIES (E. F.).—No variety of Strawberry will be either fine or productive on "a light gravelly soil," unless very great care is taken to mulch the surface throughout the spring and summer, and to have them well supplied with water. We should plant Keens' Seedling and Black Prince.

BOOK ABOUT MOTHS (A Constant Subscriber).—Westwood & Humphrey's "British Moths."

BOOK ON INSECTS (G. Cooke).—Kirby & Spence's "Introduction to Entomology." An edition in one volume was published not long since.

VARIOUS (A Subscriber).—1, we prefer thinning Grapes when they are about the size of a No. 4 shot; but the thinning usually requires repeating. 2, Give a *Brugmansia* required to flower in July a large shift early, harden it off, plant in rich soil during the middle of June, give plenty of water, and it will bloom until frost injures it. Of course, the same treatment indoors will do. We have *Brugmansias* in houses dense masses from May to November. Of course, out of doors it will cause less trouble. 3, Ascleas should seldom be pruned back to the old wood, though it is often done successfully. Grafting and inarching are best done with young plants. 4, In syringing, chilled water is best so long as the plants are in a hothouse. 5, Such lists as you mention have been often published in these pages. When we repeat them often readers justly complain that they occupy space that might be filled with new information.

BOOK ON VINE-CULTURE (R. R.).—There is one by Mr. Thomson besides that of Mr. Sanders, and they are each of the same price. Mills "On the Fine Apple" would suit you, but we are not sure about the price; it is not more than 3s.

ORNAMENTAL FENCE (*A Subscriber*).—Peeled oak cord-wood makes a first-class rustic fence, and its peculiar forms may be arranged to suit almost all tastes. An examination of a rustic chair will suggest something of the appearance of oak cord-wood made into a fence; but you can have it placed to suit your own fancy, for rustic work is ornamental in proportion to its rudeness. A fence of this kind covered with Ayrshire Roses is one of the finest objects in a garden. The branches of the English Maple (*Acer campestre*), are the best of all wood to form a rustic ornamental fence; but they can rarely be had. The thinnings of Larch plantations are most used, and may be made to assume a variety of forms, the commonest of all being upright posts driven into the ground close enough to keep sheep out, with a half pole on top for capping. This is commonly known as the Scotch fence. Any joiner would suggest to you several shapes and put them together in squares, triangles, or diamonds to suit your taste. We cannot undertake to give sketches for projected undertakings, though always happy to criticise those forwarded to us. We are persuaded that few things equal a neat low iron fence which is all but invisible, and still answers the purposes of a hedge. If you wish for something more apparent to the eye, we would recommend larch poles 3 feet 6 inches high to be driven into the ground at 9 inches apart, and at every 12 feet to put in a pole 12 feet long, so as to leave 9 feet out of the ground. From the top of one pole to the top of the next stretch a tarred rope, allowing it to fall in the middle 3 feet from the horizontal, and nail it to the top of each post. We would then plant a climbing Rose and a pillar Rose also, as well as a plant of Honeysuckle at the foot of each post; and put in Sweet Briars, Honeysuckles, climbing Roses, and Clematises along the fence. This would give the finest rustic fence imaginable.—G. A.

NEW GARDENS (*Jucenia*).—You might ascertain from Mr. Smith, the owner, whether they have a vacancy.

VINES IN POTS (*Alpha*).—If the wood of your Vines is becoming a little brown, give all the air and as much sunlight as you can, and in a week place them in the front of a south fence and fasten the rods to it, so as to brown them well, giving merely as much water as will prevent flagging. You will need less water if you mulch the pots.

DRYING TOBACCO LEAVES (*Idem*).—Cut the flowers off the tobacco plants, except a few pods for seed. Strip off the large leaves, run a string through them at the thick end, and hang them in a shed 1 inch apart leaf from leaf. When dried, press them very firmly into a box or basket. When heated a little, unpack them and dry them again; then pack them again, and repeat this packing and unpacking until at last you pack and there is no smoking from them. Leaves thus treated and cut up will be capital for fumigation and for cigars too.

GLADIOLUS DISEASE—**CHERRY APHIS** (*C. E.*).—The disease in Gladioluses is very prevalent, and may have been brought on by the three last adverse seasons, which have not been warm enough to ripen the bulbs properly. An eastern aspect is certainly not a good one for anything, but quite good enough for Cherries, which do better as dwarf pyramids or standards than against a wall with any aspect. The black blight, however, is sufficient to cause the barrenness of your trees. It is the Cherry aphis, the worst of the kind to effectually destroy. The best cure is to go over the trees on the first appearance of the pest, and squeeze the points of the shoots or leaves between the fingers, and after that syringing the trees strongly with water heated to 120°. Very strong tobacco water will kill the pest, but it injures the shoots and, therefore, cannot be applied. We have found Page's Blight Composition very serviceable in ridding the trees of this pest, though it is not half so good as the fingers and thumb. It is astonishing how many leaves and branches can be cleared in an hour by the finger-and-thumb system, which, if persisted in, never fails to effect a cure.

LAPAGERIA ROSEA CULTURE (*Subscriber*).—The treatment of this plant has been given over and over again in this Journal. In the first place it requires perfect drainage—extra drainage as for an Orchid, and a compost of fibry loam and sandy peat in equal proportions, with a little leaf mould and silver sand added to and incorporated with the mass. Bits of charcoal not larger than a walnut nor smaller than a hazel nut help to keep the soil open. In the second place it requires plenty of space for its roots, and does best planted out, for it is impatient of checks, such as are occasioned by frequent pottings and rapid transitions of temperature. Thirdly, it likes plenty of light without much sun, and does better in a northern than a southern exposure. Fourthly, it requires watering abundantly, and cannot have too much when growing. Fifthly, it requires a stove heat from March until September, and a cool greenhouse temperature for the remainder of the year. Sixthly, it need not be expected to flower much the first seven years, if a seedling, nor until it attains a good size and is proportionately strong let it be what it may. Lastly, it should not be potted until it gives signs of growth, and then must be placed in a moist and increased temperature. Attention to these rules will cause it to flower.

BOOKS (*G. F.*)—A new edition of "Paxton's Botanical Dictionary" was published in 1849.

GARDEN PLAN (*New Forest*).—We purpose publishing an engraving of your plan next week, with a few notes.

PEACH TREES IN POTS UNDER VINES (*S. W. C.*).—If you, as you state, have Grapes in the same house with your Peaches and Nectarines, we presume trained under the roof as usual, you must not feel surprised at the latter failing, as the trees cannot have sun enough to ripen their shoots. Your potted trees need not be repotted annually, but only top-dressed in October. As your climate is mild and moist there is less ripening power to harden the shoots than under glass. In all climates near the sea coast, with the soft humid air of your county—Cornwall, Peach and Nectarine trees should have brisk fire heat while in bloom, and abundance of air night and day. The same treatment in October to finish ripening the shoots would not be amiss. Surely Camellias in Cornwall would not require any shelter in winter if placed beneath a south wall, and the pots covered with dry fern or other litter. The Rev. Mr. Bradon, near Southampton, has a south wall covered with Camellias, which bloom profusely and have no winter shelter.

COCO-NUT FIBRE REFUSE FOR POTTING (*Ovoeca*).—Used mixed with loam, &c.; the mixture should be well pressed and made firm, otherwise the water passes through too easily.

HEATING A GREENHOUSE FOR BEDDING PLANTS (*W. Thornhill*).—From 35° to 40° will be the temperature you will need in winter. We think the house heated by gas will do; but you must take the fumes from the burning gas out of the house by letting the pipe end in the open air.

VARIOUS (*An Amateur*).—We cannot recommend nurserymen. If you will buy the "Gardener's Year-Book," which you can have from our office free by post for fourteen postage stamps, you will there find a list of all the nurserymen in the four divisions of these islands, and you can select for yourself. Set your Fuchsias out-of-doors fully exposed to sun and air, take them under cover when frosts commence, a back shed will do for them. Repeat early in the spring, using a compost of strong loam one-half, rotted stable-dung one-quarter, and leaf mould one-quarter. The pyramidal form is best; one stem, and the branches cut-in at the time of potting to form a pyramid. Flowers of sulphur dusted over the leaves, and the admission of air freely by night as well as day, should cure the mildew on your Cucumber leaves.

MALE AND FEMALE PARTS OF PLANTS (*A. W., Belfast*).—Neither the dictionary you name nor this Journal professes to teach botany; and the pointing out the different parts of plants is entirely a department of that science. For giving you this information buy "Hensley's Rudiments of Botany," or Macgillivray's edition of Sir J. E. Smith's "Introduction to Botany." In answer to your three queries—most species have the male and female parts of fructification in the same flower, but others have the male flowers and female flowers on different plants, and a third set have male flowers and female flowers on the same plant. Most plants are self-fertilised without the aid of either insects or the gardener. When the pollen of the male part of a flower is ripe, fertilisation is effected by placing it on the female part if that is ripe also.

NAMES OF PLANTS (*M. A. R.*).—*Malva Cressna* (Cree's Mallow), a common greenhouse plant, growing about 2 or 2½ feet high. It is not a creeper. (*Ovoeca*).—1, *Billiardiera heterophylla*; 2, *Lythrum salutum*; 3, *Andromeda polifolia* var. *angustifolia*; 4, *Adiantum formosum*; 5, a form of *Polystichum angulare*; 6, *Alstromeria*, some variety of. The poor specimen sent was shrivelled up.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

KILLING FOWLS FOR TABLE USE.

LAST week we told our readers the birds they should kill; and we are now disposed to tell them how they should be killed, and how prepared for that which a talented French writer on poultry calls "the sacrifice."

There is certainly an indisposition to eat butcher's meat in hot weather. Fish is at a discount, unless it be in the shape of that most delicious of all unwholesome food, a lobster salad, or the most treacherous of plain boiled, a crab. Something must be eaten in families, and those who read THE JOURNAL OF HORTICULTURE of last week (their name is Legion), look wistfully at certain dwellers in the farmyard which do not seem to promise excellence; and they speak in favour of roasted fowl and lettuce. Little Sarah loves every living thing, and rather prefers the "naturals" and the "unfortunates," the chickens that persist in trying to look behind them, and have what the country people call the "gids;" that one whose right foot turns the wrong way; and the poor little hunchback that puts her in mind of "Master Walter." None of these may be killed. Pa has twelve that may not be killed. Ma has just eighteen pullets she must have for winter layers. One says the last were so hard and stringy he could not eat them, and the last but one was actually tainted, though it had been dead but forty-eight hours. We think we said all we had to say of the unfortunates last week. The week before we wrote of securing eggs, and now will speak of killing.

The ordinary method is to slip into the hen-house at night, to catch two chickens, to cut their throats, to tie their legs with a piece of list, and to hang them up feathers and all. When they are wanted forty-eight hours afterwards, cook says, "She never see such weather; they're green already!"

If the fowls are to be eaten on Thursday, let them be caught on Monday evening, and then shut up in a basket, absolutely without food or water till the next morning. Being quite empty, they must be killed, not by cutting the throat, but by breaking their necks. Take hold of the tips of the end or flight-feathers of the wings, and the lower part of the thighs and knees with the left hand. Take hold of the head of the fowl in the right hand, turn it (the head) upwards in the hand, but simultaneously pull up with the left hand, and press down with the right. Isaack Walton said, "Impale the frog as if you loved him;" and Talleyrand said, "No zeal in anything, it is always getting into trouble." No zeal, no strength, and very little effort is required. Press downwards with the right hand till there is a trifling jerk—it is the dislocation of the neck. Death ensues in a few minutes. If there is any doubt it can be easily solved by feeling the back of the bird's head, there will be found an "ugly gap" between the head and the neck. When a fowl is bled to death it is very white, but it is often dry; when

it is killed by dislocation of the neck it is juicy. As soon as the bird is dead, indeed I should say directly it is dead, it should be picked. The large feathers, the wings and tail, should be pulled first. The reason why they should be picked is that the fowl then gets cold; it is for the same cause essential that they should be killed early in the morning or in the evening; the latter is preferable. Even in hot weather the fowl is spoiled nine times out of ten by the fermentation of the food, or the decomposition of the water that was in the body at the time of death. The bird fasted and killed as we have described may be drawn and trussed for the spit some hours before it is wanted, and spite of hot weather it will be sweet, tender, and juicy.

POULTRY SHOW AT STOWMARKET.

On the 30th and 31st ult. the first Exhibition of a Society just started at Stowmarket, the object of which is to hold a show of poultry every year, took place. It was announced as the "Eastern Counties Grand Poultry and Horticultural Show,"—a somewhat high-sounding title. The Exhibition was held on the grounds of Abbott's Hall, the residence of Wm. Prentice, Esq., by whom they were kindly offered to the Committee; and they are admirably suited to the purpose to which they were put. The time of year is very much against a good Show, the birds being just now in full moult, and this tended to keep down the number of entries. Nevertheless the Show, even as regarded the number of entries, which was nearly ninety, or about 250 birds, was good; and as to the quality of the birds, better could not have been expected. This first meeting may, therefore, be pronounced an unequivocal success. The arrangements of the Committee and their Honorary Secretaries, Messrs. Ranson and A. L. Simpson, were excellent, the pens being arranged in two rows, one above the other all round the tent, while the spaces between them were filled with evergreens, and flags were suspended from the top.

There was no competition for the prizes offered for *Spanish fowls*. The show of Coloured *Dorkings* consisted of five pens, several of which were first-class birds; this is evident, from the fact that the Judges after awarding the two prizes considered a third pen worthy of high commendation, and also commended a fourth. The first-prize birds (Mr. Lingwood's) were beautiful specimens of the breed, and have taken prizes at the Crystal Palace, Birmingham, and other places. The cock in the second-prize pen (Mr. H. Payne's), was well worthy of special distinction; the characteristics of the Dorking—short on the legs and broad in the breast—were fully developed. There was really no competition in the White Dorking class; the only two pens shown belonged to Mr. H. Lingwood, of Needham Market, who is so celebrated in this breed. There were six pens of *Cochin-Chinas*, on this occasion divided into two classes—Coloured and White, and Partridge. The first-prize cock in the former class, which, although termed Coloured and White, consisted entirely of Buff, looked a giant among fowls. The second prize was taken by a cockerel and two pullets under five months old, and very fine birds of their age they were. The entries in Partridge *Cochins* were only two; but the first prize, belonging to the Rev. H. Curry, are a very celebrated lot. In the Dorking chicken class Mr. Jas. Frost, of Parham, took both prizes with some of his celebrated stock; and Mr. H. Payne's, which are chickens of the birds which took the second prize in Class 2, were highly commended. In Black-breasted *Game* there were nine exhibitors, Mr. Matthew, of Chilton Hall, Stowmarket, whose *Game* stock is very celebrated, taking both first and second prizes. An extra prize was awarded to Mr. James Goodwin, of Hollesley; Mr. Reason Goodwyn, of Woodbridge, receiving a high commendation. The whole class was worthy of commendation. Mr. Matthew's cocks were decidedly superior to the others in height, in the cleanness of their heads and squareness of their body. It must have been a difficult matter, however, to say which was the better of the two prize cocks. There were only three exhibitions of Duckwing *Game*, but the Judges thought them all worthy of commendation. Mr. S. Matthew was the only exhibitor in the White and Pile *Game*. The *Game* chicken class had five entries, of which three were Mr. S. Matthew's, and with them he took first and second prizes,

and his third pen was highly commended. In the class for Any variety not included in other classes, there were eight pens, and both prizes were taken by Mr. Samuel Waters, of Ipswich, with French birds of the *Crève Cœur* breed—black birds, with crests. Mrs. S. Nunn, of Buxhall, showed some Africans in this class—white fowls whose plumage more resembles hair than feathers; these were highly commended. Mr. J. Oxer, of Shelling, had a couple of pens of capital half-bred Spanish fowls. The other fowls shown in this class were Gold and Silver-pencilled *Hamburgh*. The first prize in *Game Bantams* was taken by Mr. J. Frost, they were of the Black-breasted sort. Mr. R. Goodwyn took the second prize, and he also showed the chickens of these birds. The other sorts of Bantams were worthy of note: the first-prize pen belonging to Mr. Riley, of Onehouse, were Gold-laced; the second, Mr. H. A. Oakes's, were Rumpless or *Roblets*.

The *Ducks* were good in all classes. The White *Aylesbury's* shown by Mrs. Seamons, Hartwell, Aylesbury, who took both prizes, were really wonderful birds, and one would have thought it scarcely possible that they could have arrived at such a size in four and five months.

The *Geese*, as a class, were very fine; Mr. Sparling's, which took the first prize, were only twelve weeks old. The first prize *Turkeys* (Mr. J. Bird, of Great Finborough), were beautiful.

The *Pigeons* were a very large and good class, the two prizes being taken by Mr. D. H. Feltham, of Kentish Town, London, with Black Carriers. Mr. Feltham also exhibited a beautiful pair of *Dun Carriers* not for competition. The following is the prize list:—

DORKINGS (Coloured).—First, H. Lingwood, Needham Market. Second, H. Payne, Stowmarket. Highly Commended, J. Frost. Commended, J. Smith.
DORKINGS (White).—First and Second, H. Lingwood. **CHICKENS.**—First and Second, J. Frost, Parham. Highly Commended, H. Payne; J. Smith. Commended, J. O. Fison.
COCHIN-CHINA (Coloured and White).—First, Rev. G. Gilbert, Claxham, near Norwich. Second, Mr. C. T. Bishop, Lenton.
COCHIN-CHINA (Partridge).—First, Rev. H. Curry, Bosmere Hall. Second, Rev. G. Gilbert.
GAME (Black-breasted and other Reds).—First and Second, S. Matthew, Stowmarket. Third, J. Goodwin, Hollesley. Highly Commended, R. Goodwyn. Commended, J. E. Kersey.
GAME (Duckwings and other Greys and Blues).—First, S. Matthew. Second, R. Goodwyn. Commended, J. Goodwin.
GAME (White Piles, Blacks and Brassy-winged).—Prize, S. Matthew.
CHICKENS.—First, Second, and Highly Commended, S. Matthew.
HAMBURG (Golden-spangled).—Prize, Mrs. A. Pattison, Maldon.
HAMBURG (Silver-spangled).—Prize, T. Twose, Halstead.
ANY OTHER VARIETY.—First and Second, S. Waters, Ipswich (*Crève Cœur*). Highly Commended, J. Oxer; Mrs. S. Nunn.
BANTAMS (Game).—First, J. Frost. Second, R. Goodwyn, Woodbridge.
BANTAMS (Any variety).—First, J. Riley, Onehouse. Second, H. A. Oakes, Buxhall.
DUCKS (White Aylesbury).—First and Second, Mrs. M. Seamons, Hartwell, Aylesbury. Commended, C. Tyrell, Haughey.
WHITE DUCKS (Any variety).—Prize, H. A. Oakes.
DUCKS (Rouen).—First withheld. Second, J. R. Kersey.
DUCKS (Mixed breed).—First, H. Wicks, Badley Mills. Second, J. Oxer.
GESE.—First, A. Sparling. Second, W. Green. Commended, W. B. Webb.
TURKEYS.—First and Second, J. Bird, Finborough.
PIGEONS.—First and Second, D. H. Feltham, London. Highly Commended, H. A. Oakes. Commended, K. Parish; A. Sparling.
RABBITS.—Prize, G. Gudgeon, Stowmarket. **Buck.**—Prize A. J. Alexander, Ipswich.
SWEETSTAKES.—*Cochin-China Cock*—Prize, Rev. H. Curry. *Dorking Cock*—First, H. Lingwood. Second, Mrs. M. Seamons.

The Judges were the Rev. Thos. Lyon Fellowes, Beighton Rectory, Norfolk, and the Rev. Morton Shaw, of Rougham Rectory.—(*Suffolk Chronicle*.)

HEDGEHOGS AND SNAKES DESTROYING CHICKENS.—I see in your Journal of the 11th a confirmation of the fact of hedgehogs destroying chickens; and to me this is of importance, as I have just had turned loose in my yard three young hedgehogs and an old one, and I shall now order them to be caught again. My object for turning them loose was to drive away the mice and rats. I know that snakes and blindworms will kill chickens. I had a very choice lot of these, which I sent to a splendid walk, as I thought, it being in the midst of a large coppice; but I received word that six out of thirteen were gone in one day. I set out determined to watch; and towards twelve o'clock, the sun being very hot, I went into the shade behind some trees. The hen and brood were near an old wood pile, when all at once the hen and chickens fled in all directions. I jumped

to my feet and saw two snakes, one of which I caught: it is about 12 inches long. They were making directly for the chickens with their heads about 4 inches from the ground. **POULTRY-PANCIER.**

GOSLINGS WASTING AWAY.

A few weeks ago I purchased twenty-four Geese, fourteen of which have since died. These I found to be infested with insects (lice, I presume), as per enclosed specimens. Never having had any similarly affected, I am at a loss to account for them, and am desirous to know how to get rid of them; also, the after-treatment to strengthen the birds. They seem daily to grow weaker and less disposed to take either food or exercise; in fact they become quite torpid, and at last die from apparent exhaustion, complete skeletons.—**J. G.**

[All Geese are subject to lice. They are confined to no age, condition, or sex. They seem to have been made for them. Being perfectly flat, they bestow themselves carefully between two feathers and the water has no effect; but if it should penetrate they take refuge in the down. If the down should get damp, instinct prompts the bird to leave the water directly if possible. If you were to go to Leaden-hall at Michaelmas and look at the best, largest, and fattest Geese, and if you were to examine them attentively you would find, that although they were plucked some lice remained sheltered in the wings and those parts that were still feathered. There is no Goose without them. They do not, therefore, cause the death of your goslings. If you bought in your immediate neighbourhood, either you have been imposed upon or your feeding has been bad. If you bought in London there is no knowing where they were bred. Goslings come in flocks from France, Holland, and Belgium. Of our own countrymen, Scotland and Ireland help us. The history of Geese is a history indeed. Stratford in Essex had formerly the monopoly of feeding. Thither all the flocks of Geese wended. From the beginning of July till the end of August all the roads leading to Stratford were full of Geese, tended by one man who kept all in order and stayed any wandering propensities on the part of any of his charge by catching the offender by the leg, not with his hands, be it understood, but by means of his crook. A long, very long rod, had a stout wire at the end, twisted something like a crook, but more elaborately. It was widely open at the mouth, but narrower at the end, and held the leg so fast that the Goose gave in and laid down. "*Nous avons changé tout cela.*" Where there are no commons there will be few Geese bred, and commons are fast disappearing throughout England. The consumption of oats in Stratford during the months of August and September was incredible to a stranger, and the slaughter the same. These are, however, the records of past ages and have little to do with our present question.

If the Geese were in good condition when you bought them, ascertain how they had been fed and feed the same. If in doubt, shut them in a pigstye, fill a trough with growing sods of grass half full; on them put some gravel, then a layer of oats, and then fill by pouring water gently in one corner till it is full. Your Geese will feed and thrive.]

FOUL BROOD NOT AN ARTIFICIAL DISEASE.

It is with regret that I perceive so high an authority among bee-keepers as my friend Mr. Taylor pronouncing the disease which has recently devastated my apiary to be "an entirely artificial one"—regret, not on my own account (for to me personally it is of no importance), but for the sake of others, since, if such a mistaken notion obtain currency, farewell at once to all the benefits which I had hoped might have arisen from giving publicity to my misfortune, whilst the cause of progress amongst English bee-keepers will receive a check which may long keep them immeasurably behind their continental and American contemporaries.

With the view, therefore, of removing this false impression, I will describe two instances which have come under my observation in which foul brood has manifested itself in hives managed in the usual way.

Last spring I received a lot of comb procured for me in the county of Wilts through the kindness of a brother apiarian. Among these were some which had died of foul brood, that I now know came from a colony, but which there is no reason to believe had been in any way interfered with.

The other case came more immediately under my own observation, and may be deemed perfectly conclusive on this point. Last autumn I turned up a common straw hive belonging to an "old dame" who resides at about three miles distance. There was some honey, but very few bees, and I confidently pronounced the queen to be defunct. In this, however, I was mistaken. When the bees were afterwards expelled by driving a living queen was found, but the colony was nearly extinct from the effects of foul brood. This I now know to have been the case, although at the time the affair appeared perfectly inexplicable, and an inspection of the combs did not then enlighten me—now I should recognise them at a glance as having belonged to a foul-breeding stock.—**A DEVONSHIRE BEE-KEEPER.**

FURTHER REMARKS ON EXPERIMENTAL BEE-MANAGEMENT.

I CANNOT help making a few remarks on the opinions and theories put forward by some of the writers in No. 123 of your Journal. I fully admit that Mr. Lowe lays down the general principles of apiculture correctly and well; but I cannot perceive that he has solved the mystery of the origin of Mr. Woodbury's foul brood. I do not mean its introduction into his apiary—Mr. Woodbury himself has told us how that occurred—I mean its original cause. I have no theory of my own on the subject, and shall be ready to believe that it arises from too much experimenting, or from anything else, when good evidence of the fact is forthcoming; but I cannot think of leaping to such a conclusion. I know that experimenting may be carried too far; what cannot? A merely experimental apiary can never be a thoroughly prosperous one; but it does not, therefore, follow that it will become diseased. It will become weak from the constant interruption of breeding, and paucity of numbers will cause poverty of stores; but are weak hives more liable to disease, properly so called, than strong ones? I think not. I have had more or less of chilled brood under various circumstances, but never knew it to become corrupted in the hive, nor do I think that it ever would, so long as there were bees enough to perform the usual routine duties. Even if it did, I do not think that it would be so virulently contagious as this foul brood appears to be. Mr. Woodbury's opinion—nay, assertion, that it was introduced to his apiary in purchased combs, no doubt gives the immediate cause in his case. I expect that he will conquer the enemy without departing from his own line of tactics, and go on his way rejoicing; but I fear that he will have to leave the abstract cause of foul brood as much a mystery as it now is.

Mr. Lowe is right in maintaining that forced swarms should only be made in "accordance with the natural instincts and habits of bees, and with a due regard to time, circumstances, and condition." When so made, the operation is not, as Colonel Newman expresses it, "fighting against Nature;" but the exercise of man's undoubted right to make Nature subservient to his wants and wishes. Dominion was given to him over the brute creation, in its entirety, bees being no exception. He cannot change the operations of nature; but he may and does modify and adapt them to his requirements. The sheep's wool would, no doubt, fall off naturally without the assistance of shears, but not in a convenient form for our cloth-makers. The cow would give spontaneously as much milk as was necessary for the sustenance of her calf; but the farmer finds it to his advantage to manage these matters in his own way. Nor does it appear that the cow is in any way injured by prolonging her natural period of giving milk, or the sheep by the premature loss of its fleece; though I dare say there were antique men who protested against both these modifications of nature when first introduced, using much the same arguments as their representatives of the present day use against the rational management of bees.

That "driving" does not always succeed is scarcely a good argument against its general usefulness. No great

amount of patience is required to keep tapping for fifteen or twenty minutes, and this period, though not always sufficient, will often be so.

It is to be regretted that "Jonas Jackson" has not told us more in detail what steps are necessary to secure the co-operation of our bees. In what language are we to address them? Their own? I for one understand it not. Will plain English do? May the German or Frenchman speak to them in his own idiom? If so, bees are pretty good linguists. Suppose I want to make my Ligurians "a speech," who will translate it for me? Their nationality has been disputed, and if it were settled I should be no better off, for I understand neither Swiss nor Italian. It is true that the horse and the dog understand certain words and phrases; but much care is bestowed on their early training to make them know that certain sounds convey certain ideas; and I do not clearly see that a similar course is at all practicable with bees. Virgil and the rest of antiquity may be excused for their inaccuracy as naturalists, but just fancy a nineteenth-century man

"——— heir of all the ages
In the foremost ranks of time."

mounted on a stump in his garden, gravely haranguing the bees about his domestic felicities or calamities!—JOHN P. EDWARDS, *Shirleywick, near Stafford.*

WOODEN HIVES.

THE materials of which hives are made, as well as their construction, have an important influence over the quantity and quality of honey, and in facilitating the working of experiments.

Now, wood and straw are the most common hive-materials in this country, and the only kinds I ever used for general purposes; and I do not intend to raise an argument for the one, nor objections to the other, but simply to state the experience I have had of both, but without speaking of their construction.

When I first adopted wooden hives, it was from not being able to obtain a sufficient quantity of a peculiar make of straw hives which I had ordered. The first winter I had them I had an equal number—viz., five of each, and I met with every discouragement from my neighbouring bee-keepers. Every one had a different reason to demonstrate that I would not have bees long; but not one of the objectors could explain to me the cause that would destroy the bees. So I was left alone in my undertaking.

I was not ignorant about the nature of wood, and I took care that no external damp whatever, unless that of the atmosphere, could touch the hives.

The alighting-board I made moveable, with a space between the hive and it, so that the rain could not get near the hive. I set the hives all in one direction and equally well protected, so that they would have a fair chance for proving which should do best.

It is a singular fact that I have never had a single death of a swarm from disease or other cause in my wooden hives; but it was very different with the straw hives—I lost every one of them in about eighteen months. The reason of this was abortive brood. The cause of the abortive brood I attribute to the straw hives being a little warmer than the wooden hives, and the very changeable weather here in spring: consequently, when a few warm days occur, where the queen is prolific, she spreads her brood more than the bees are able to attend to if the weather turns colder, as it often does. When this takes place the loss of the hive is certain, unless some of the combs are removed—not only those that are affected but also those adjoining, till no more are left than the bees are able to cover. This restricts them from breeding more than they are able to attend to, until the weather becomes warmer and encourages their forwardness, when they continue to do well.

This removing of combs I have done often and have never failed. I also make it a rule once or twice a week to smell my hives to know whether they are free from foul brood, which is easily detected by the strong effluvia, but I have never been troubled with it in my wooden hives. Some people make it a rule to cut out only those portions that have

there is always scattered brood which is not easily seen, so that the bees are kept scattered and are never able to keep up a uniform degree of heat. Nay, it is better to turn the bees out of the hive altogether, substituting a new and clean hive, because it is doubtful if ever they thrive in a hive that has been once diseased. The infection seems to adhere to the hive, so that it may be termed the "bee plague."

I would recommend as better than an empty hive—seeing that it is mostly in spring that this malady rages—a hive with clean combs; but if this cannot be obtained, as bees will not thrive if deprived of combs in spring, I recommend as an excellent substitute the new wax sheets, which can be had at a trifling expense, and which would enable the bees to go to work at once, and by a little feeding they would soon do well.—A LANARKSHIRE BEE-KEEPER.

WEAK AND UNHEALTHY HIVES—FOUL BROOD.

SINCE the date of my last communication, which appeared in the Number of the 4th August, and which took notice only of Mr. Woodbury's first article on "A Dwindling Apiary" in the Number of July 21st, we have been favoured with two or three additional contributions by him on the same subject, explaining the nature of the evils by which his apiary has been well-nigh ruined, the means by which these evils were brought about, and the remedies employed to extirpate them.

I shall make a few remarks on these three points. Mr. Woodbury, in reply to "B. B." in last Number, describes foul brood to be "a disease which attacks the young larvae in their various stages of development. At first only a few die, but as these putrefy in their cells the infection spreads until very few bees arrive at maturity, and the stock dwindles and ultimately perishes."

Now I have no desire to find fault with Mr. Woodbury for so describing this evil. He is following in the footsteps of not a few apiarian writers in so doing, and besides, it is a subject of which, as he himself says, he has hitherto had little or no practical acquaintance. But in this, as in a great many other matters, writers are apt to perpetuate errors by accepting for truths the mere dicta of others without due reflection and consideration. If foul brood be a disease, I should like to know by what it is caused. Are the ova as deposited by the queen tainted with the germ of some malignant epidemic, or is the malady induced by the nursing of infected adult bees? How does it originate? I know of no writer who has, in my estimation, satisfactorily accounted for the presence of foul brood in a hive on the supposition of its being a disease. Mere surmises and conjectures we have in abundance, but nothing more; and the so-called malady is in its origin and character left completely *in dubio*. Mr. Woodbury promises a digest of the views of some of the more reliable American and German authorities on the subject; but while I shall always be glad to peruse any article from the pen of so accomplished and able an apiarian writer as Mr. Woodbury, yet I know of no subject treated on, both by ancient and some modern writers, so full of errors as that of the diseases of bees. My general practice, indeed, in reading any work on the bee, is to pass over with a mere cursory glance the chapter so designated. The fact is, the ailments of bees are few and simple, and such as are induced by famine and filth, by confinement and spurious and insufficient food. I am not disposed, therefore, to view the presence of foul brood in a hive as a disease, properly so-called, at all. If I am right in accounting for its origin, it can no more be called a disease than if we were to snatch the unhatched eggs from a domestic fowl during the period of incubation, expose them to the chill of a frosty night, and then ascribe the death and consequent decay of the embryo chicks to a natural disease produced by some unaccountable cause. If it is to be termed a disease at all, let it be described as Mr. H. Taylor described it in last Number—an entirely "artificial one." Abortive brood, however, properly speaking, can never be classed under the category of bee maladies.

Let me here anticipate any objections which may be urged to the evils in question being produced only artificially. In

my communication, be it remembered, I adduced only a few of the causes which produce foul brood, and which I thought strictly applicable to the case before me; but I have witnessed the same evils caused without the intervention of a single artificial process; and while I could create or originate abortive brood in any hive at pleasure by a few manipulations, I have also seen it produced in some instances from purely natural causes and without any interference on my part at all. Weather influences alone may give rise to it. Let me illustrate this. Some few years ago I had a very vigorous colony domiciled in an observatory or unicomb-hive. The weather (it was in autumn), was extremely warm. The queen had extended her laying down nearly to the floor-board. A sudden and violent transition of the temperature occurred, however: cold frosty nights forced the bees upwards in the hive; the brood in all stages were neglected, and thus the evil was generated in this hive simply by weather influences alone, rendering the part of the comb so affected permanently and entirely useless. The same state of matters may be produced likewise in straw hives, in cases where a populous swarm may have a large surface of brood-comb with little honey, and be overtaken in such a condition by a long continuance of cold adverse weather. In such circumstances the bees diminish in numbers with astonishing rapidity; the necessary warmth, attention, and nursing being withdrawn, the brood are neglected, and abortions to a large extent often occur. In early spring, too, in sparsely populated hives, through the operation of somewhat similar causes, I have witnessed these evils originated on a limited scale.

Notwithstanding all this, however, foul brood is an exceptional occurrence, and rarely met with in ordinary circumstances. It is only in the hands of the experimentalist that we find its presence generally manifested, and for this reason—that when bees are domiciled in suitable hives, and when left, as I stated before to Mr. Woodbury, to themselves, and allowed to follow unrestrained the impulses and instincts of their nature, such disorders will seldom arise. Seldom do bees err in their instinctive powers of adopting suitable means for desired ends, of so regulating and adjusting their whole internal economy as to provide for the exigencies and conform to the requirements of the occasion, and thus prevent the bringing about a state of matters which is productive of such evil consequences as foul brood. I have often contemplated with the profoundest admiration the wonderful instinctive foresight of the bee in thus providing for future contingencies and wants, and that no less wonderful sagacity which guides the queen in the interesting business of oviposition, accommodating herself, so to speak, to the particular state or condition in which she may be placed, withholding or meting out from the almost inexhaustible resources of her ovarium, both as to sex and numbers according to circumstances and season. In all this there is much to admire; and the contemplative student will involuntarily turn his thoughts beyond the blue serene which o'er-canopies this busy world of ours, and exclaim, "How manifold are Thy works, O Lord! In wisdom hast Thou made them all."

I have thus shortly alluded to the nature and causes of the evils complained of—foul brood, and now let me make a few remarks as to the remedies employed by Mr. Woodbury for extirpating them.

In following Mr. Woodbury in the various processes resorted to for this purpose, I cannot help repeating my conviction, notwithstanding the importation of polluted combs from other apiarians, that the real evils with which he has had to contend have been principally brought about by his own doings and manipulations. When I took it upon me to tender my opinions to Mr. Woodbury, and to attribute the whole of the mischief complained of to experimental operations allowing the brood to get chilled, I confess I was not then aware of the precise method adopted by him for the transference of bees and combs from one hive to another; but as I perused the account of the several operations as detailed at page 78, with the prime swarms purchased in the country, can I fail to wonder—can any one fail in wondering—that the consequences resulting therefrom would beught else than what we find subsequently described at page 97—namely, the re-appearance of the evils in these high-imported combs? Let me restate one of these pro-

ceedings. A prime swarm is purchased in the country several miles distant from Exeter. The bees are then driven, say of an afternoon, and put into a hive furnished with empty combs. This is all well; but what is done with the hive itself, full to overflowing, no doubt, with brood in all stages, from the newly-laid egg and hatched grub up to the full-grown pupa? It is left empty and tenantless! In this state it is brought home to Exeter, and stowed into a corner of the kitchen for the night; and next morning, still destitute of bees, the combs are cut out, fitted and fastened into frames, and then—only then—after a dozen hours interval, it may be, and all the manipulating work besides, are the intended bees introduced to these combs full of chilled and neglected brood. Can it be wondered at that the tender little grubs (not to speak of those more advanced and sealed), requiring so much attention, care, and warmth from the bees, should give way, and that in such circumstances foul and abortive brood would not as a consequence follow? Mr. Woodbury may feel that I express myself too strongly; but such a mode of proceeding is so contrary to my own practice, and what I believed to be the general practice of apiarians in such circumstances, that I cannot help recording my utter surprise at the whole matter. It may be that there is some error in the narrative or that I have misinterpreted it; for though I admit that the more advanced pupae can remain for a considerable time uninjured in such circumstances, I can never allow that the tender larvae will not suffer from such a lengthened and protracted exposure.—J. LOWE.

WINDOWS IN FRAME-HIVES.

In reply to the inquiry made by "A. B. C." in page 119, I may state that I find windows nearly useless in frame-hives. In the first place they are so blocked by the frames that little can be seen of the interior of the hive through them; and in the next place the habit of examining every comb separately renders them altogether superfluous.

These are my views respecting windows in frame-hives; but if "A. B. C." should be of a different opinion, Messrs. Neighbour will readily supply the omission at a trifling addition to the first cost of each Woodbury-hive.—A DEVONSHIRE BEE-KEEPER.

BEEES AND CHLOROFORM.

THIS spring found me with three wooden and one common cottage-hive, all particularly strong. I had a swarm from each of the mansions; a swarm and cast from the cottage. August 5th I went round to collect rent: No. 1 mansion gave me a large and small box, containing 16 lbs.—good; No. 2, three small boxes, 16 lbs.—good again; No. 3, "it not being convenient," promised three small boxes in about a fortnight, weather permitting—good if true. The cottage tenants candidly told me, as they had but one room I must distrust if determined to have rent. Being old friends I let them alone, determined to have my revenge out of the five new cottages. No. 1, a large Yorkshire straw with a deep "eke," tenanted on the 2nd of June must go. My groom said something about digging a hole and fetching brimstone matches; on which I gave him a short extemporary lecture "on the folly of destroying these valuable insects," and told him he should see the wonderful effect of chloroform; but just then I remembered I had none. I gave three teaspoonfuls on doubled rag. All right, they are merry over the first taste; and I believe I felt some pleasure in thinking how soon they would "stop that game," and amused myself in watching about half an inch thick of bees remaining on the floor-board, coolly walk into their neighbours' house. Ten minutes—that is the time—up with the hive. Stop! stop! they are kicking-up a row. That is a bore. More rag and a double dose of chloroform. Still they talk. Gave them an ounce (cost 1s. 6d.). They are done at last. The hive is shaken, and I, for the first time, see what I take to be "all the bees in a hive,"—double the quantity I thought of. The queen must be found, because I wanted to see one, and also because "Bee-keeping for the Many" says she must be killed before her subjects are transported

to another colony; but the bees becoming particularly lively, and the evening rather dark, it must be given up, and they are placed on their own floor-board with their new friends over them.

Now for the honey. I thought there would be three stores and hoped for four. There are a few bees walking about, but it is all right. "The book" tells me a few will remain, which may be brushed out with a feather; but the more they are brushed the more bees come. The "eke" must be taken off—a proceeding the bees did not agree to, for they were creeping all over the place. At 10 o'clock p.m., I gave it up for the night, and placed my friends in a cool greenhouse until morning. At 10 o'clock next morning I found the house full of robber bees from all the hives. As a last hope I placed the hive in a wheelbarrow, and had it wheeled about for an hour to deceive the robbers, which proved effectual, as I now have the honey in a sieve, and there it must remain two days, says my book; but what in the world will "Jonas Jackson" say about my future luck after this?

I have now four hives of this year; two I want to take, and two I want to keep, all very strong indeed. Would you recommend another trial of chloroform, of course using a fresh sample? Would Mr. Woodbury kindly give me the distance between the glass of his unicorn-hives?

The frost of the 19th July cut several hundred acres of potatoes down to the ground. They are now making new tops.—AN ISLE OF AXHOLME BEE-KEEPER.

LIGURIAN BEES IN SCOTLAND—FERTILE WORKERS.

I HAVE been favoured by Mr. Alex. Shearer with a copy of *The Haddingtonshire Courier*, containing the following interesting article from his pen, proving that the Ligurians are asserting their wonted superiority. There can be little doubt that it was the existence of fertile workers which frustrated the attempts to rear a queen in the first of his artificial swarms, especially as I have this season found workers laying eggs in two instances in which royal cells had turned out abortive.—A DEVONSHIRE BEE-KEEPER.

"CULTURE OF LIGURIAN BEES.—It is nearly twelve months since I communicated to the *Courier* my experience in the artificial swarming of the Ligurian bees. Perhaps it may be interesting to your apiarian readers to give the results of that trial, and my further experience. It will be remembered by those who take an interest in bee-management that I made two artificial swarms. The first one turned out to be a failure, not owing to any defect in the system, but because of the wet weather during the time the queen required to make her 'matrimonial' flights. It ended in there being nothing laid but drone-brood; and notwithstanding I supplied her several times with bar-frames of brood-comb, that they might rear another queen which was really fit for her duties, she still reigned supreme, preventing any other queen coming forward to take her place; or rather, if the doctrine of parthenogenesis be a fact—and there is in this case strong evidence that it is so—that there are bees having all the appearance of workers, which have yet the power of laying drone eggs only. In all our searches for a queen in this hive we never could find one (and it was frequently done with the utmost care), which in other circumstances we never failed in finding. But it appears those bees which have the power of laying drone eggs will never allow any other queen to be reared. Such is the theory of those who hold by this doctrine. For my own part, I forbear giving any conclusive opinion on the matter—I would require more experience on the subject. I merely state the fact as we found it in our case. No bees being bred, they gradually died-off, and her neighbours began and robbed her in February this year. The second one was more successful; she has survived the winter, and given off a top swarm, and appears to be a hybrid between the Ligurian and common bee.

"The old, or original Ligurian, began egg-laying in January. On the 15th of June I made the first artificial swarm. I made another on the 22nd, and one on the 30th of June, and on the 10th of July she gave off a natural swarm, larger than any two of the common ones, and on the 18th of August—the latter was a small one, and the

person who had them in charge put it back the same evening. I went the following day and found the queen had not been killed, and, on examining the hive, found a beautiful queen, and also eight queen-cells, all in different stages of progress. I divided them, leaving the queen already hatched in one, and put the other into another hive, along with half of the bees, that they might hatch another queen for themselves, which they have done, at the same time cutting off a piece of comb having a queen cell sealed up, and gave it to a neighbour, who carried it nearly two miles in a box. When he turned up one of his hives, which had given off a top swarm a few days before, he found the queen-cell still unhatched. This he cut out, and inserted the Ligurian one in its place, which was hatched by the 22nd, as on the 23rd and 24th the bees in the hive manifested all those symptoms, so well known to bee-keepers, of her majesty being on one of her excursions to find the future king. The top swarm (having of course the old queen) being in such a prosperous state—laying numbers of young brood, I made another artificial one on the 22nd; thus making four artificial swarms and two natural ones from one hive, besides taking upwards of 25 lbs. of honeycomb from the artificial swarms, to give them more room for breeding, that there might be abundance of young bees out to begin on the heather when it is ready. I gave also a bar-frame of drone-brood to a friend, a bee-keeper in Edinburgh, whose Ligurian queen had failed in laying drone eggs (another very puzzling circumstance in bee-keeping). Had I been disposed, and had hives to put them in, I could have easily, from the same hive, made almost any number of swarms; but I am satisfied with the six in the meantime. If all the Ligurian queens are like the one I have, then the common bee cannot be compared with them as breeders. An acquaintance in Edinburgh, who got one last year, informs me that his has thrown off four swarms since May, and all strong. Mine would have been much stronger had not a great number of bees died in the spring by dysentery, caused, I imagine, by the stock swarm being kept in a wooden box. The moisture arising from the bees not being absorbed by the wood, it collected on the floor-board in such quantities that in their efforts to get rid of it they took the disease. During the winter and spring I shifted the comb four times into a dry wooden box, and each time they improved partially. At last I had a hive made on the same principle, in straw, by John Heriot, Longyester, which has completely cured them. I will never keep stock swarms again, during winter, in wood; it may do in summer, but certainly not in winter.

Another proof of the superior breeding powers of the Ligurian bee: out of eight good hives of the common bee, only two gave off a second swarm with me, all getting the same treatment. In order to keep the Ligurians pure, I have all the six young swarms at Longyester, where there are no common bees within nearly two miles of them. I will thus have a further opportunity of testing their merits with the common bee, and also the hybrid."

HOW TO DESTROY WASPS' NESTS.

I HAVE for years been more or less annoyed with wasps about this season of the year—those, I mean, that make their nests in some hole in the ground—and I have at times adopted various means to destroy their nests. I need not here enter into any detail how I have in former years proceeded to take them; but latterly I have adopted the following mode:—

I procure some coal-tar, a handful of fine shavings, or what is, perhaps, quite as good—a bit of an old mat, soak it well in the coal-tar, take a long stick—a broom-handle will do very well—and then in the evening about ten or eleven o'clock, when the wasps are nearly all gone home, I proceed to the nest and push the piece of old mat, now full of coal-tar, as far into the hole towards their nest as I can, and thus make them prisoners to die in their own castle.—G. DAWSON

[We have found that an effectual mode is to put a little spirit of turpentine into a wine-bottle; to thrust its neck into the entrance of the nest; place a little straw over the bottle, and burn it, so as rapidly to fill the nest with turpentine vapour. This is more prompt and less cruel, we think than our correspondent's plan.—Edb.]

WEEKLY CALENDAR.

Day of Month.	Day of Week.	AUGUST 25-31, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
25	Tu	Star Thistle flowers.	71.4	56.8	61.2	15	2 45	2 47	47 4	27 0	11	9 1	237
26	W	Southernwood flowers.	72.7	48.7	60.7	11	4 5	0 7	22 5	45 1	12	1 45	238
27	Th	Fleabane flowers.	73.2	49.8	61.5	11	5 5	VI.	55 5	7 3	13	1 25	239
28	F	Golden-rod flowers.	72.8	49.8	61.3	16	7 5	55 6	20 6	31 4	14	1 11	240
29	S	Chelsea Gardens founded, 1673.	71.6	48.3	60.0	14	9 5	53 6	43 6	54 5	15	0 53	241
30	Sun	13 SUNDAY AFTER TRINITY.	71.8	48.1	60.0	8	10 5	51 6	7 7	16 7	16	0 35	242
31	M	Meadow Saffron flowers.	71.1	47.7	59.4	15	12 5	49 6	31 7	34 8	17	0 17	243

From observations taken near London during the last thirty-six years, the average day temperature of the week is 72.1°, and its night temperature 49.0°. The greatest heat was 89°, on the 28th, 1850; and the lowest cold, 32°, on the 20th, 1850. The greatest fall of rain was 1.32 inch.

JOTTINGS ABOUT SOME BEDDING PLANTS OF 1863.



OBELIA Paxtoni sent out by Messrs.

Carter is one of the most effective of the bedding novelties of the current season. Its habit is so prostrate, the contrast of its light blue and white so perfect, its growth so free, and bloom so profuse, that it is a great acquisition. I was particularly struck with its excellence when contrasting it with a seedling raised here by a well-known nurseryman, Drummond, to whom I gave some of the plants I had from London. He thought his own good, but he will destroy them that his stock may not be mixed.

The *Tagetes pumila* is a very striking, spreading plant, not exceeding 12 ins. in height, and presents a mass of rich yellow blossoms spangling its good foliage.

The spring being so dry, and the summer warm, the slugs have not attacked it, for they usually mercilessly destroy its ally, the French Marigold. It is much benefited by an occasional watering with liquid manure.

The experience of all parties agrees as to the *Amaranthus melancholicus ruber*. In favourable seasons, and under proper management, it is a most valuable addition to the coloured-foliaged plants. Nothing equals it in brilliancy of colour when in a good light. Plants if small when put in do not thrive, the cold wind so dries the leaves: they should be 6 inches high in pots before transplanting into the borders. The winds and cold of May and early June almost destroyed the first lot. The growth of plants under circumstances apparently the same is rather irregular. Some of mine are a foot high, and nearly that across, while others close to them are at least one-third less. Those planted the first have never done well. This plant also enjoys weak liquid manure. During July the improvement in the growth and beauty was more marked. The *Perilla*, though so much more hardy, is very dingy and coarse as compared with the *Amaranth*.

There is a half-shrubby plant of loose growth with small silvery leaves (the name I forget), that I saw last week at Messrs. Garraway's nursery, at Bristol, used as an effective background of a ribbon-border. It was mingled with *Perilla*, which formed an excellent contrast in colour and growth. This firm had planted rows of *Amaranth*, none of which were prospering, the wind having spoiled the leaves.

I do not know what may be the future height or

No. 136—Vol. V., New Series.

size of *Calandrinia umbellata*. When 2 inches high it throws up its flower-stalk not exceeding 3 inches, carrying an umbel of rich red-purple flowers, which appear to be permanent and suitable for small nosegays. The foliage is so light and marked, that I expect it will form a nice edging of low growth. Is it a perennial and hardy?

For singularity of growth, and strictly a creeping plant, nothing can exceed *Arctotis repens*, with its long silvery branches that literally stick to the ground. If it has a blossom that contrasts with its colour it is very suitable for filling corners of beds. I should presume by its growth that it will be found an excellent plant to hang down over rockwork, when it would form a close substratum for flowers of a brilliant hue. It would contrast well with the dark blue *Lobelia*.

There is another plant that in the early part of the day presents a blaze of light red blossoms—*Mesembryanthemum tricolor*. Why called *tricolor* I do not know. Many white-blooming plants came up with the red, nor can I distinguish the one from the other by any difference of foliage. The period of blooming is but short, as it seeds so freely, and the plant lies so close to the ground that these seeds cannot be cut off without more labour than it is worth. Its roots are so very fine that I presume its natural and most suitable site is on stones, to which its silky roots adhere, that they may be nourished by the moisture always on rocks.

For distant effect an old-fashioned plant, *Enothera acaulis*, with its showy white blossoms a few inches from the ground, is worthy of notice.

I cannot conclude my comments on these plants, selected solely from the catalogues of Messrs. Carter and of Messrs. Henderson & Son, without any previous knowledge of them, and solely by their descriptions, without expressing my satisfaction at finding the descriptions of the catalogues quite correct. To amateurs with small means and small gardens, who must judge and rear plants for themselves, it strengthens their confidence in their fellow men, and enables them for the future to trust firms to whom they personally are unknown. I am sorry to say this is far from being the case in purchasing fruit trees of some of the provincial gardeners, several of whom are as likely to send you the wrong as the right sort. So much is this the case, that I have long ago made it the rule with some firms never to buy a tree till I have seen the fruit on it. This is not, however, I believe the rule of the trade, who are so dependant on the care and honesty of their foremen.—B. J. S.

BOILERS.

THE boiler question has been ably discussed of late. The admirable papers of "G. A." have thrown considerable light on the matter, and will, doubtless, prove useful to many. He has, with rather more courage than is usually displayed on such occasions, put forth his own views of what a boiler ought to be, and given a plan which anybody may work out for his own profit. Judging from what I know of the action of heat on boilers, the

No. 778.—Vol. XXX., Old Series.

plan given at page 85 would be well worth trying, and I should like to hear of its having been carried into effect in all its details. Meanwhile, I wish to offer a few further remarks on the subject, for although I believe it is one that more directly concerns employers, still it is also important that gardeners should make themselves thoroughly acquainted with it, and this most of them have opportunities of doing, both from their own practice and from the reports of the experience of others.

In the first place, I would criticise what "G. A." says in regard to the nature of heat, not in a spirit of opposition, but with the object of inquiring further into the matter. From what "G. A." observes, the natural tendency of heat is to direct its course upwards. Now, in my view, it is to diffuse itself equally on all sides from the point of combustion into the surrounding air. The air thus heated becomes lighter, and is quickly borne up by colder, and, consequently, heavier air; so that, heat being diffused, heated air has no motion in itself until displaced by that which is heavier—in other words, that which has a greater specific gravity. It may not be possible to distinguish between heat itself and heated air, and perhaps it is of little consequence whether we can or not; but it is worth while ascertaining the truth while we are about it, and I will endeavour to make my meaning more clear by illustration.

If you light a candle and place it in the middle of a dark room, the light is diffused equally on all sides—that is, as nearly equally as we can judge; and it is my belief that the heat would be equally diffused, but, that being less subtle than the light, it, in combination with the air into which it is diffused, is more readily acted on by the cooler air, and is quickly borne upwards. The fact that there is more heat at 2 inches above the light than at half an inch from the side of it does not alter the case, since the heat that would otherwise be equally diffused all round is concentrated at the top by the upward current of air.

According to "G. A.," in speaking of the action of fire on boilers, the greatest heat is directed to that part which is directly over the fire. Now, I am not sure that this is correct. For instance: the blacksmith does not place the iron to be heated over the fire, where, according to "G. A.'s" theory, the greatest heat would be, but he thrusts it right into the fire—to the very spot where the blast of cold air, driven in by a powerful pair of bellows, comes in contact with the fuel; or if you take a common pair of bellows and blow up your parlour fire, you will perceive that where the nozzle of the bellows is directed there will be the hottest part of the fire, and, further, if you look into a furnace fire you will see that the greatest heat is about the bars, and although there may be more heat at 1 foot above the fire than at 3 inches below it, there will be more heat 1 inch below the fire than at 1 inch above it, for the greatest heat is where the air comes in contact with the burning fuel. Presuming this view to be correct, it shows the advantage of having hollow bars to the furnace, and that a great deal of heat is thus encouraged, but that is not enough.

I have said the greatest heat is at the point of contact between the fire and the draught of air, but the question is how to adapt this to the economisation of heat. Here I must confess myself at fault, for although, as I believe, the greatest heat is at the bottom of the fire, still the bottoms of the bars where the air comes in contact with them on its way to the fire are comparatively cool, and the same effect would be produced if a current of air could be made to play on other points than the bottom of the furnace. Leaving this ground, then, as untenable, we come back to the question of how to utilise the heat in its upward course—upward, not because of its tendency to fly off, but because it is pushed up by that which is to replace it. The most reasonable method of utilising this heat appears to be to intercept it, by breaking its direct progress, and throwing it into numerous directions instead of allowing it to pass off in a body, and this must be done in such a manner that sufficient draught is allowed for the fire to burn clear. This must not be overlooked, for it not unfrequently happens that in directing our attention to one point we are apt to overlook others. It is on this account, that although improvements are made from time to time, a perfect boiler has not yet appeared, and it is possible never will; yet "G. A." has suggested some changes, and I freely coincide with him that what he suggests would be a decided improvement.

He provides horizontal coils of pipes for the heat to strike against in its upward course, and having passed there it is again to break against the water-jacket, which is grooved to receive it. Still, in my opinion, a great body of heat is allowed to pass off unintercepted—for this reason: that although I believe the natural tendency of heat is to diffuse itself, still the pressure of the atmosphere tends to concentrate it into a column in its upward progress, narrower as it mounts higher, as is seen in the form the flame of a candle assumes. This, then, would allow the strongest heat even in such a boiler to pass into the flue.

It appears, then, that what is wanted is the means of intercepting, breaking, turning, and appropriating this column of heat, so that it shall not pass away from the boiler until no more heat is allowed to escape than will carry the smoke up the flue. This, of course, must be allowed for, or the whole contrivance will fail; and this probably will be a point of some nicety, for the boiler itself may be as nearly perfect as it could possibly be, and yet the least fault in the setting might spoil it. It would, however, be possible to avoid this; and I will follow the example of "G. A." and give a few suggestions of my own, which, as a matter of course, are open to criticism, and so far from fearing to have defects pointed out, I shall be glad to be set right if I am proved to be wrong.

I do not know whether it is generally known, that when a piece of wire gauze or fine wire netting is held in the flame of a candle that the flame becomes dispersed, takes a wider scope, but unites after passing through it. This wire naturally intercepts a great deal of heat. Two or three such layers would absorb nearly all the heat, and allow the air to pass off comparatively cooled. Now, although I do not remember seeing anything of the sort, I do not think it would be impossible to cast hollow plates perforated with holes of about three-quarters of an inch in diameter, so that the plates would hold water and yet allow flame to pass through the perforations. By way of illustration I will suppose a metal dish such as is used to serve up large joints of meat, and which are made to hold hot water. Suppose this dish could be pierced with holes half an inch in diameter and about an inch apart, the holes to go through from top to bottom so that you could see through them, and yet the dish to hold hot water the same as before; and further, suppose three or four of such perforated water-plates to be cast of different sizes, of from 18 inches or 2 feet for the largest, and 1 foot or it may be less for the smallest; then we should have a water-jacket or a boiler made somewhat similar in form to Weeks's boiler—that is, tapering towards the top, only pipes either upright or horizontal are unnecessary excepting for the furnace-bars, which I would assuredly have hollow. The main part of the boiler would be a plain hollow water-jacket, and the perforated hollow plates would be fitted within this; the largest say a foot above the fire, the next about 9 inches above that, the next at an inch or so less distance above that, and, if another, a still less distance to be allowed between them—the hollow plates and water-jacket to be all connected, so that the water could pass freely through them all; the flow, of course, to be from the top of the water-jacket, and the return at the bottom of it in connection with the hollow furnace-bars.

There should be openings through the water-jacket to allow of a wire brush being introduced for clearing the boiler of accumulated soot, for this would be a matter of necessity in such a boiler; but with a ready means of introducing a brush the cleaning would involve a very trifling amount of trouble on the part of the stoker. With regard to the circulation of water, the boiler should be made so that the water could pass freely from the bottom to the top. This is all that is necessary as regards the boiler in the circulation of the water, for that chiefly depends on the fall of water in the return-pipe. If we examine into the principles on which hot water circulates we shall find that it does not depend on the nature of hot water to ascend, but on the power of colder water to push it up or displace it, and that the greater the weight of water in the return-pipe the more rapidly is the hot water made to ascend. If the return-pipes were twice as thick and held twice as much water as the flow-pipes, the mere construction of the boiler would offer no obstruction to the circulation of the water.

With regard to the draught of the flue, as "G. A." justly remarks, a boiler fire ought to be perfectly under control, and a good draught ought to be secured by sufficient height and breadth of chimney. But then there should also be the power to regulate that draught, for a great deal depends on that power, chiefly as regards economising fuel, but also for the safety of the plants.

A boiler constructed on the principles I have suggested may at first sight appear complicated, but I do not think it can be more so than pipe-boilers generally, or that it can not be made as strong and durable; nor is there any reason why it could not be adapted to heat buildings of various sizes, and be made larger or smaller as required. Certainly I think it will present a surface of water to the action of the fire both direct and indirect, that will make it capable of doing a vast amount of work at a comparatively small consumption of fuel.

I would rather give my experience of what has been done than merely endeavour to explain what might be done; and so I will take this opportunity of stating what I know of a boiler, concerning which, as far as I have seen, others have had but little to say—that invented by Mr. Messenger of Loughborough. One that I have the management of is, I believe, about 4 feet long, 3 feet high, and 2 feet wide outside, the whole being enclosed in brickwork. This is the nearest guess I can make, for I have no means of taking an accurate measurement. The boiler is composed of pipes which are three-sided and laid horizontally, three on each side of the fire, and a layer of seven over it, and another layer of six or seven over that. This arrangement presents the whole, or nearly the whole, surface of water in the boiler to the direct action of the fire; and this surface of water is necessarily very large in proportion to the size of the boiler, the furnace-bars also being hollow and forming part of the boiler. The fire plays about and between these pipes, and is very much dispersed: consequently a large proportion of the heat is intercepted. The only fault I find with the arrangement is the constant attention required in keeping clean, for the space allowed between the pipes is very narrow, and a small accumulation of soot will stop the draught; but this cleaning is but the work of five minutes each day when the boiler is in full work. It will be seen that, supposing each triangular pipe is 4 feet long and 4 inches wide at the base, it follows that each pipe presents 4 feet of surface to the fire; and there being twenty of these, there will be 80 feet of surface exclusive of the furnace-bars. The fire is also perfectly under control; for with good fuel, a clear flue, and a rapid fall of water, it is possible to get up the heat in an incredibly short space of time; and by shutting up the ashpit-door and closing the damper a shovelful of fuel will keep alight the whole day.

As near as I can understand there are two thousand feet of pipe attached to this boiler, nearly all of which is four-inch. Although the whole of it is not required to be heated except in case of frost, still the boiler will heat the whole and that effectively, and, as near as I can judge, at no greater consumption of fuel than I have used to heat 120 feet of pipe by means of a saddle boiler. By turning a valve the flow of hot water is stopped, but the return is still available, and the pressure of cold water is in no way diminished. This is no small matter for various reasons, but chiefly on account of economy in fuel and water.

In conclusion, I would say a word with regard to fuel. While living in the neighbourhood of London, I seldom ever burned coals either in a boiler furnace, or in a common flue: I have mostly been in the habit of burning coke, and very often have burned nothing but cinders. The Newcastle coals which are burned in domestic grates turn to cinders, and these when sifted make an excellent fuel for the furnace. Those who burn coal in the furnace use what they call inland coals, and these burn to a white ash, which is unlike the ash of the sea coal. In Staffordshire people burn coal in the parlour grate, and slack in the furnace. This answers very well, but the soot and smoke it makes will soon clog up a flue, and render constant sweeping necessary. —F. CHITTY.

COUNTY OF KILDARE HORTICULTURAL EXHIBITION.—Our readers will perceive by an advertisement in another column

that a Horticultural Exhibition in connection with the Kildare Agricultural Society is to be held at Naas on September 1st. Numerous prizes are offered for flowers, fruits, vegetables, &c., amounting to more than £100.

HEATING A SMALL PROPAGATING-HOUSE.

I AM about to put up a small span-roofed propagating-house for early use, say in the middle of January. Will you give me a little advice on the subject? The house will be 20 feet long and 7½ wide, inside measure. There will be a path through the middle, and on one side will be a bed of 2½ feet in width for plunging pots of cuttings in, and on the other a stage for the cuttings when potted. Under the bed I purpose having a trough made, I suppose of cement, and having the pipes laid in it, so as to be covered with water. How am I to make the tank watertight? I am told that a pipe passing through brickwork forming a tank will, when heated, expand and cause a leakage. How is this to be prevented? What width and depth should the trough be, and what size the pipes—a flow and return of course? and then what size should the pipes be for top heat?

Added to this house will be a pit 40 feet long and about 4 wide, to which I purpose having a continuation of piping from the house. Should the piping be of the same size as that in the house, the object being merely to exclude frost from the beginning of March?

Perhaps you will be good enough to say what kind of boiler will be best adapted to my purpose. Some recommend a saddle, some a tubular one, some one thing, and some another. Have you any knowledge of Riddell's Patent Slow Combustion Boiler? It seems to be simple in its construction, and it is said by the patentee to have several very desirable qualities, such as requiring little fuel and attention, no expense in setting, and that it can be so easily regulated as fairly to entitle it to the name given it. The patentee of this boiler has, to me, a novel plan of connecting hot-water pipes. At the ends of the pipes are flanges—made square. These are drawn together and secured with four screws and nuts. At the junction of the pipes there is a ring or collar of something like gutta-percha or some such material of an apparently elastic property, which renders the pipes perfectly watertight, so it is said. Perhaps you have seen the plan and can speak of its merits or defects. A more simple mode than this of putting together and removing pipes cannot well be devised. If the plan is effectual it deserves to be made known; and it would be well to make it known if it is not effectual, so that the public may not be deceived and disappointed.—C. S. E.

[First, as respects the tank, the fear of expansion is next to groundless. There is more danger of leakage from building on an insecure foundation. The tank should consist of brick well wetted, laid in cement, and a layer of cement all over. The tank for the place should be 2 feet wide and 5 inches deep. Were we disposed to be economical, we would dispense with pipes through it, and make the tank into a flow and return by a division down the middle and an opening at the end. We presume you mean covering with slate. We find no fault with the pipes through the tank except for economy. It is certain that with the pipes there you are sure of bottom heat, even if you have a leakage, and that is not likely if your foundation is good, and the cement good and used the instant it is made.

For such a place we have recommended a small wooden tank, or box, elevated on piers or battens, so as to give room beneath for many things. The simplest plan we have met with was a wooden trough 2½ feet wide and 6½ inches deep, divided down the middle. It had a space for water 3½ inches deep, and was covered above with thin house slate, and thus about 3 inches were left for setting or plunging small propagating-pots.

For such a tank as yours two three-inch pipes will be ample. If the brick sides of the tank are exposed, three three-inch pipes will do for top heat; but if not exposed much, you ought to have three four-inch pipes for early work. It is bad economy to have pipes excessively hot. If the water in them is rarely above 160° to 180° all the better. Of course, if all your pipes are close, with air-pipes at the highest point, the mere level, if all above the boiler, is of

less consequence. These levels, however, must be kept in view, if you mean to heat the 40-foot pit from this house. Your simplest plan would be to place the border, if practicable, between the two places, and take heat as required for either place by valves, or take the flow-pipe into a cistern higher than any of the pipes to be heated, and from thence take a flow for top, another for tank in the propagating-house, and one for the pit, to be regulated by plugs as desirable. If your pit were 6 feet wide, two three-inch pipes would do all you require, and you cannot well have less for a four-foot pit—that is, 80 or 90 feet in all.

Any of the simplest boilers will do all you want. We believe Riddell's to be very good, but we take all high recommendations with a little reserve. We have worked in our time most of the kinds of boilers advertised in these columns, and we find them all good if well set and well managed. If we have a prejudice, it is for tubular or conical boilers; but we do not forget, that in the largest establishments and under the greatest gardeners, there is a general tendency to a return to some modification of the old saddle-back. We decline, therefore, authoritatively to say what boiler is best, and much prefer that our readers would exercise their own judgment.

We have not seen the flange spoken of in use, but we have no doubt it will answer. We have repeatedly detailed how Mr. Lane and other proprietors of large establishments use Portland cement for forming the joints, which so far as first cost and ultimate economy is concerned we consider far preferable to iron filings and sal-ammoniac. Where large fires are used we would prefer the joints close to the boiler to be iron.—R. F.]

HINTS TO AMATEURS ON THE USE OF SOOT AS A LIQUID MANURE.

WHILE the materials for liquid manures are often difficult to procure by the amateur gardener, and frequently tedious in their preparation, injurious in their application, or offensive in their smell, soot sufficient for the purpose is almost everywhere at hand, and in a few hours can be prepared for use; and if amateur gardeners were more generally aware that no manures can be taken up in a state of solidity by plants as food, and that they can only absorb them in a gaseous or liquid state, and to which state all solid manures applied to plants must be previously reduced before any benefit can be derived from them by the plant, they would in many cases facilitate the process by using them in a liquid state. Sir Humphry Davy characterises soot as a powerful manure, possessing ammoniacal salt, empyreumatic oil, and charcoal, which is capable of being rendered soluble by the action of oxygen: consequently, when soot is dissolved in water there is no waste, while if sown by hand in a dry state, a great portion of its ammonia, which is one of its active ingredients, is volatilised, and is dissipated in the atmosphere. Soot when used as liquid manure gives vigour to the plant without grossness, and imparts a healthy green to the foliage without the least chance of injury to the plant. In fact, watering a sickly plant with a weak solution of soot water is the surest and safest means of restoring it to health.

In preparing soot water it is only necessary to throw a few handfuls of fresh soot into a pail of water, and after stirring it up to leave the mixture for a few hours to settle, and when the liquid has become clear, it is fit for use, and can be given once a-week in summer without the least risk of injury to the plants, whether in pots or in the open ground.—GEORGE GORDON, A.L.S.

GLADIOLUS DISEASE.—I see in your Journal of the 11th inst. you mention the disease in collections of Gladioli near London. I find the same in many of mine here (Aberdeen), and have been puzzled what to apply as a cure. The flower does not seem in the least affected by it; but the leaves of several are entirely gone, while others are perfectly fresh and green.—A READER.

THE disease which so much resembles the Potato disease is universal among the Gladioli tribe. It was correctly

described by one of your recent correspondents. It is very curious that some roots of a patch planted at the proper time have never vegetated. They remain in the ground apparently fresh and firm, but without any further signs of life. When Tulips or Hyacinths thus fail to grow they speedily die and become rotten. Has the firmer tissue of the Gladiolus bulb greater power to resist decay? or will these dormant roots awake into life next spring? Should they be taken up or left in the ground to take their chance? —B. J. S.

CLERKENWELL FLOWER SHOW.

THIS annual Show of plants and flowers belonging to the working classes and children of Clerkenwell was held on the 19th and 20th inst. in the schoolroom of the Lamb and Flag Ragged School, Clerkenwell Green, and was in every respect a most interesting and successful Exhibition. It differs somewhat from the other exhibitions of the sort which have been held in London, inasmuch as its principal aim seems to be to encourage the cultivation of plants by children. Most liberal prizes are, however, offered for competition among adults, and particularly among working men; but the fact of the prizes in the latter class being offered for collections of six plants necessitates the number of exhibitors being very small indeed. We must, however, remark that the six Fuchsias which won the first prize in this class were exceedingly fine plants, and had evidently been grown by a man to whom the cultivation of plants was no novelty, and the same might be said of the winner of the second prize. The children's plants, however, formed the greater part of the Show, and were to us much the most interesting part of it. We very much doubt if it could be possible for better plants to be exhibited by children living in such a neighbourhood. What struck us most was the remarkable cleanliness of every single specimen exhibited. We did not see one dusty or dirty leaf in the whole collection, which clearly shows that some one has impressed upon the youthful exhibitors the great necessity of washing their plants in order to keep them in good health.

Among the other plants exhibited were Apple, Plum, and Orange trees, Ferns, and one or two very nice plants of *Coleus Verschaffeltii*. Prizes were also offered for cut flowers grown by the exhibitors; but, as might be expected, there was no very keen competition in this class. The first prize was won by a very tastily-arranged pan full of Fuchsia and Ageratum blossoms edged with variegated Mint. Several kind patrons had sent bouquets of flowers, which were on sale for the benefit of the schools, and Mr. Cutbush, of Highgate, had sent some which were most beautiful and most tempting. In the evening of the second day Mr. Bodkin, who is another inhabitant of Highgate, attended and gave away the prizes. When we mention that these latter were awarded by Mr. Broome, Mr. Dale, and Mr. Gordon, every one will be satisfied that there was no cause for grumbling.

And now we will take the opportunity of making one or two suggestions, which we are sure will be taken in good part by the promoters of the Clerkenwell Flower Show, who evidently take such very great pains to secure success.

In the first place we would suggest that the plants which win prizes should be more prominently noticed. We found it quite impossible in most instances to ascertain which were the prize plants, as the card which ought to have been placed conspicuously in front of the pot was often lying in the pot on its face. We think these prize-cards should be rather ornamental than otherwise, as they are much treasured by the successful exhibitors.

Looking at the number of plants exhibited, we think it would be beneficial to form the different sorts of plants into different classes, and not to let plants which are so very dissimilar as the Lobelia and Fuchsia compete with one another.

We cannot help thinking that the good effects of the Flower Show would be much more widely extended if more prizes were offered for single specimens, and fewer for collections. We find from experience that the poor do not keep "collections" of plants, and we must begin by adapting our classes to the exhibitors.

In other respects we think it would have been impossible

for the Clerkenwell Flower Show to have been more successful; and we do not hesitate to say that the plants exhibited by the children would have carried off the palm at most, if not all, of the exhibitions of the sort which have been held this year in the metropolis.

In one most important respect the promoters of this Show set an excellent example to others, for they not only got up a Show and offer prizes, but evidently take great pains to instruct the exhibitors how to grow their plants successfully. The childrens' plants could not otherwise have been so creditably grown and exhibited.

THE EARLY-FLOWERING MOOR HEATH.

ERICA CARNEA, *Linnaeus*.

SYNONYMS.—*Erica herbacea*, *Wendland*. *E. saxatilis*, *Salisbury*. *Gypsocallis carnea*, *D. Don*.

Nat. ord., HEATHWORTS.

THE *Erica* is one of the unfortunate genera among many others that has come perfected, as it were, from the hand of the great father of our artificial system, to suffer amputation and distribution in after ages; for Professor Don, in his clever arrangement of the order *Ericaceae*, places our present plant in his new genus *Gypsocallis*—principally on account of its flowers being urceolate, or bellying out towards their base, like an old-fashioned pitcher, and their stamens being exserted, or projecting beyond the mouth of the corolla. And although every one may not agree in the separation, still all must be ready to pay that tribute of praise due to the very eminent ability of the late Professor for his acuteness of observation and depth of botanical research, but which nevertheless seem to have rendered him more nice in his generic divisions than plain botanists admit to be necessary, or indeed than is useful to the practical man; for certain it is that the extension of our botanic vocabulary, and perplexing increase of synonyms, form considerable drawbacks to any advantages that may accrue from nicer distinctions.

The name *Erica* is derived from the Greek *eriko*, to break, from its supposed quality of breaking, or rather dissolving, the stone in the bladder, or, according to some writers, from the brittleness of the plants; that of *Gypsocallis* is from *gypso*, lime, and *kallistos*, most beautiful, the plants being very elegant and inhabitants of calcareous soils.

The Early Moor Heath is a neat little bushy undershrub, which grows about 6 inches high, clothed with evergreen, linear, glabrous leaves, arranged in whorls of four along the stems, and pendulous flowers, which are disposed in terminal racemes directed to one side; small, pale red, or flesh-coloured, conical in shape, and produced abundantly from January to April. The plant, like those of other hardy kinds, grows freely in any light sandy soil or peat earth, and makes a most desirable subject for the front part of the flower-border or for edging round an American-bed, as it bears cutting back without injury, and is perfectly hardy, braving our severest winters with impunity. It is a native of Austria, South Germany, and Switzerland, and is easily increased by cuttings; but as its procumbent branches increase freely in any light soil, a more convenient mode of propagation is by layers, which will root sufficiently to admit of separation in eighteen months.

The *Erica carnea* is an old inhabitant of our gardens, having been introduced in the year 1763.—GEORGE GORDON, A.L.S.

AMARANTHUS MELANCHOLICUS RUBER AND LONICERA AUREO-RETICULATA.

I HAVE not yet seen any remark on the injury which the leaves of the *Amaranthus melancholicus ruber* sustain from watering overhead. Drops of water falling on the leaves discolour them, and the spots seem to spread so as to injure the whole leaf.

With reference to planting-out *Lonicera aureo-reticulata*, I observe that the plant is no exception to the general rule that coloured leaves lose their brilliancy from want of heat. The plants have thriven perfectly in the open air in a southern aspect this summer, but the leaves have lost the

bright gold-lacing or reticulation and have become dull and blurred-looking, offering a great contrast to a plant under glass.—A CONSTANT READER, *Dublin*.

NOTES ON GARDENS PUBLIC AND PRIVATE.

No. 3.—VISCOUNT HOLMESDALE'S, M.P., LINTON PARK.

No reader of THE JOURNAL OF HORTICULTURE needs to be told, that amongst the most practical and accomplished of our modern horticulturists none stand higher than the able and intelligent gardener to whom the management of Linton Park is entrusted; while of the place itself they have often heard so much that my few rough notes will lose much of their interest. As, however, they are intended not to be descriptions of the places visited, but just what I have called these short papers, "Notes on Gardens," I do not profess to tell what are all the trees grown, or the shrubs planted, or give minute plans and descriptions of the bedding-out. I shall, notwithstanding these disadvantages, give my recollection of one of the pleasantest mornings I have spent during the present summer.

Linton Park, known formerly as the seat of the Lady Julia Cornwallis, but since her marriage as that of Lord Holmesdale, lies pleasantly situated upon the slightly-elevated ridge of chalk hills which run along the north-eastern portion of the county, ending at Folkestone; and, being halfway down the hill, it is quite sheltered from the northerly and easterly winds, lying fully open to the south and west. While thus enjoying an immunity from those piercing blasts, which in the spring months sweep like a sirocco along the coast, it nevertheless has a good deal to bear from the south-westerly gales which are so prevalent in this part of England; and judicious care has evidently been exercised in former days to plant extensively for the protection of the house and grounds from those winds. The house itself is a plain building exteriorly, but is undergoing a thorough renovation inside. The walls and ceilings of the reception-rooms are all being painted by hand; and the suite will form one of the most beautiful and exquisite specimens of taste and art to be seen in England when they are completed. The pleasure grounds are situated in the rear of the mansion, from which a series of terraces lead down to the lower portion of the ground. The pinetum lies to the left, containing, as I shall have to notice, some very fine trees; while the conservatories, greenhouses, and kitchen garden are situated at the back of the house. A noble avenue of Elms leads out to the Maidstone road in the front of the house, and another to the church at the right hand. Some magnificent Elms are to be found, not only in these avenues, but in other parts of the grounds; and to me, coming from our treeless neighbourhood, there is always great pleasure in the sight of such luxuriant foliage as this park affords.

Knowing but little of Mr. Robson save as a collaborateur in the pages of THE JOURNAL OF HORTICULTURE, I yet felt assured from the hearty and genial character of his writing that I should meet with a cordial reception; nor was I disappointed. The greatest kindness and hospitality was shown to me; and after a very pleasant morning I was enabled to go on to other avocations not far off, which had especially called me from home.

The readers of your pages know very well, I think, that I have been a somewhat strenuous opponent of the bedding-out system as it is carried to extremes now-a-days. Well, after visiting Linton one has only to say before we condemn it altogether, See what it is when carried out under the most favourable auspices, as it is there under the able management of Mr. Robson. There were two things that struck me very forcibly as to the principles on which he managed to produce these admirable effects. One was that he employed, comparatively speaking, very few varieties, and that he was very particular that nothing should interfere with the oneness of colour in each particular flower. Thus, of course, all *Verbena*s with eyes would be excluded—in fact, *Purple King*, and another, a pink flower, were, I believe, the only kinds employed in the place; but even the dark horsehoe tint in many of our *Geranium*s was sufficient to exclude them from use. The plain green foliage or the simple variegated ones being those only employed, such

flowers as Herald of Spring, Mrs. Pollock, or Sunset would be thereby excluded.

The grand central bed, an oval measuring (including the grass border of 3 feet), 90 feet by 68, was one of the most brilliant sights that could possibly be imagined. A large star formed the centre of it. This was filled with yellow *Calceolaria*, the star itself being formed of *Perilla nankinensis*, and alongside of it the white *Alyssum*, forming thus a double line of dark purple and white, which was very effective. At the distance of a few feet there was a scroll pattern, formed in the same way of the *Perilla* and *Alyssum*; while what, I believe, ladies call a pinked or scalloped-border formed in the same way ran round the outside of the bed, making a number of small triangles. All the space between the border and the centre star was filled-in with *Shottisham* Pet variegated *Geranium*, which Mr. Robson likes better than any for this purpose, inasmuch as the foliage is very much cupped, and thus exhibits a good deal of the white variegation. The outside triangles were filled with *Tom Thumb*, which Mr. Robson thinks still unsurpassed, unless it be by *Perfection* or *Attraction*; while a border of *Golden Chain* finishes the bed. It will thus be seen that this grand bed, so effective in its arrangements and so striking in its *tout ensemble*, is really formed with only six varieties of plants, and I question very much whether it would be possible with a much larger variety to make it as beautiful. The side beds were in scrolls, and several different varieties both of *Scarlet* and variegated *Geraniums* had been tried here; but with the exception of *Attraction*, I do not think that for these purposes *Tom Thumb* was beaten. *Bijou* Mr. Robson considers too lanky in its growth for his purpose, and *Flower of Spring* is not so white in the foliage as some others.

While thus only a few things are used here, others are tried in different parts of the ground; but it will be clear to any one, that in this central point of attraction experiments must not be tried, and only such things used as are certain in their results. Amongst those things which have been experimented upon this year have been *Coleus Verschaffelti* and *Amaranthus melancholicus ruber*, the former a complete failure, and the latter a great success; but I gathered from Mr. Robson's account of it, that it requires to be grown in the house until tolerably late in June before it is planted out, the earlier plants having been all injured, but the centre row of it in the rosetry thus treated was one of the most effective lines that I have seen this season. The colour is more lively than *Perilla*, and yet affords as good a contrast to other bedding-out plants. It will, probably, too, like the *Perilla*, bear pinching-in, so as to make it more manageable as to height and breadth. *Centaurea candidissima* also promises to be very useful as a white-foliaged plant, and will, I doubt not, be found largely employed here in a little while. *Cineraria maritima* is also a great favourite, and deservedly so, its foliage being very beautiful and distinct.

In the pinetum there are several most interesting trees—fine specimens of *Araucaria imbricata*, *Pinus insignis*, *P. pinsapo*, *P. nobilis*, *Cedrus deodara*, *Thuja Lobbi*, and other well-known members of this tribe. With regard to the first of these I mentioned what I had noticed at Mr. Ivory's, of Dorking, that there were two varieties. This Mr. Robson confirmed, and said that when a plant throws out only four limbs it was sure to form an indifferent tree, but when five or six that the tree would be sturdy and well-formed. With regard to the *Deodar*, the opinion has been started by some whose names stand high in the botanical world that the three species *C. libani*, *C. africanus*, and *C. deodara* are only varieties of one species; and so far as the affinity of the Cedar of Lebanon and the *Deodar* is concerned it seems likely enough to be correct, judging from three trees of the latter here planted near to one another, in one of which the drooping character is almost entirely absent, and a limb taken off might very well pass for one of the Cedar of Lebanon. But the glory of the pinetum, though not itself a Pine, is a beautiful Cork tree, I believe as to size and beauty a unique specimen—in this part of England at any rate. It is fully 20 feet high, in most robust health, and forms a very pretty and striking object. There were also a fine *Catalpa* and a magnificent *Copper Beech*. Amongst other curiosities, too, was a fine plant of the old double white *Camellia* standing out in the open ground as a

standard. It is supposed to be about thirty years old, and blooms admirably in its present position. Time and space would fail me to recount all the interesting things I noticed here; but, as may be supposed, order and good management pervade the whole of the establishment.

Mr. Robson's own residence displays not only his own excellent taste but the liberality of his employers, being suitable in every way for the requirements of one upon whom so much responsibility rests. Many were the subjects on which we had much pleasant chat together—Nesfield's barbarisms, which, by-the-by, Mr. Robson to some extent patronises, as the large bed of which I have spoken is in winter levelled and laid out in scroll-pattern; *Spergula pilifera* and its total failure; and novelties of various kinds. We forgot, however, orchard-houses, in my opinion concerning which Mr. Robson, I know, quite coincides; our only regret being that the time was too short for all we needed. But we had each to leave early—I to my work, he to his drill; for our friend handles the rifle as well as the pruning-hook and the pen, and I am sure does it well too. It was inspection-day, and so Sergeant Robson was to be at his post. Our roads were in an opposite direction, but we parted with the hope that we should meet again in these beautiful grounds, and have another opportunity of talking over our favourite subjects.—D., Deal.

CUTTING-OFF MIMULUS SEEDS.

A PERSON of long experience in an extensive garden is much surprised at seeing an inquiry in last week's *Journal*, Whether cutting off *Mimulus* seeds will cause the plants to blow in autumn? It confirms a frequent observation that has occurred of how ignorant of or indifferent to the commonest results cultivators are, and it is much doubted whether removing the seed when fully formed will produce the object desired.

The removal of the seed-vessels before they fill sends back the nourishment to the plant, which they otherwise absorb. Let any one try two plants of Sweet Peas; by removing the seeds from one as soon as the flowers fall, he will find the plants not only continue blooming, but putting out fresh leaves, and they will do so as long as the temperature allows any flowers to remain out of doors. Let the other ripen its seeds, when they and the haulm will wither together very rapidly.

The removal of *Rhododendron* seed greatly assists the forming strong buds.—A. P.

SUCCESSFUL ORCHARD-HOUSE MANAGEMENT.

THE successful management of orchard-houses appears to be pretty general this season. Gardeners are fast learning this new branch of culture, as they are sure to do if required. The class which has overcome so many difficulties in cultivation was hardly likely to find the growing a Peach in a pot a serious affair.

I have never hesitated to recommend the orchard-house to any person keeping a regular gardener, but have had doubts where such has not been the case. Glass houses of any sort, unless filled with Cacti only, require daily attention, and where this cannot be insured persons had better think twice before building one, particularly if heated. Who has not seen a greenhouse built, not because the owner of the garden loved flowers, but because it was the thing to have a greenhouse?—a house containing plants which all thought it a trouble to attend to; sometimes watered, sometimes neglected; at times almost burnt, at others frozen. Though the orchard-house is no trouble for six months of the year, it requires daily attention during summer, and cannot be neglected with impunity. It is a singular fact, however, that amateurs in this neighbourhood have beaten regular gardeners, I believe because they have nothing to unlearn. Amongst the most successful I may mention M. Brown, Esq., of Lenton, near Nottingham; his trees have been managed entirely by himself and family. I was told he had a very fine crop, and heard some of his friends tell him they would come and see him when his Peaches were ripe.

He replied, "I shall be glad to see the whole of the Chess Club, and they shall eat what they like." The remark was made, "You need not expect many Peaches the next day, we shall eat them all." The answer to which was, "Will you?" Well, the visit was paid, and a most pleasant one it was; and though we all did our duty, I question if a casual observer would have missed the fruit eaten if he had gone into the house next morning. I know, of course, what my own success has been, and I have seen what my friend Mr. Rivers has done, but I can tell him we are both beaten by Mr. Brown. The Peaches were not only numerous but magnificent. The house is 55 feet by 15, a lean-to. It contains seventy trees, twelve of which are planted against the back wall; nine are standards planted-out in a bed in the centre of the house; fifteen are dwarf trees planted in the front border, and thirty-four are in pots. There were on the wall 500 Peaches; on the standards upwards of 1100, and 130 Nectarines; on the small trees 900 more—in all 2700. What could a club do in such a house in one evening? Let us have the run for a week, and we might make an impression.—J. R. PEARSON, *Chilwell*.

GROWING PARSLEY UNDER DIFFICULTIES.

AMONGST all the varied demands of a large establishment on the resources of the garden, there is scarcely any more regularly made throughout the year than for Parsley. In the spring months, especially after there has been a continuance of keen frosty weather, scarcely a handful of nice Parsley can be found, except what may have been under cover. In the neighbourhood of London after a sharp winter, and especially when keen easterly winds have prevailed throughout April, a small handful of Parsley is not to be had for less than sixpence, and sometimes more will be paid for it.

Parsley, in the estimation of many persons, will grow at any time and in any place, and I have frequently heard surprise expressed by such when told that from a combination of causes it has been a very scarce article. It is also well known to all who have had to supply an establishment with garden productions how fidgetty the cook will be even about a little Parsley.

I have had for a series of years splendid Parsley, so much so that part of it had sometimes to be cut down and wheeled away by barrowfuls; and again, for nearly three years in the same garden, I have been unable to grow a respectable row. Do what I could, it was always attacked at the roots by maggots, and what is very popularly known by the name of wireworm (snake millipedes). Just before sowing I have quite saturated the soil with very strong liquid manure from the stable yard, thinking that possibly they might thus be killed, and hoping that they might not come from the adjoining ground; but, in the course of a few months' time, they would be at their work of destruction again.

Another plan which I have tried was to slack a quantity of lime in water, and, pouring off the water into common watering-pots, to give the rows of Parsley a thorough soaking with the liquid. Even after this I have at times scarcely been able to produce it in anything like a creditable condition. These root-destroyers of Parsley eat into the roots and very often work their way into the bottom of the leaves. They cut into the roots where these are very small—it may be not much thicker than to hold the intruder—and whenever this is the case, the Parsley will soon assume a brown and foxy appearance, and you may give up all hope of its ever proving useful.

The soil of the garden where I was so annoyed with these underground destructives was a light, rich, free loam, which generally grew every kind of crop very well. Cauliflowers were liable to club. In another garden of very different soil, I endeavoured for some seasons to grow Parsley by sowing it in the usual way—that is, in the open ground; but owing to the nature of the soil I very seldom succeeded. It was a strong brick earth, almost inclining to clay, which, when dug up in winter, would remain just as it left the spade. If worked while in a wet state it would soon clog the instrument which was used; and, on the other hand, if allowed to remain untouched till quite dry, a fork or spade would make little or no impression upon it, from its having

become so very hard. When taken just between a wet and a dry condition, it would break away from the five-tined steel forks in beautiful order; and if the crops only started well they would generally be first-rate. I experienced very great difficulty in growing Parsley in this soil, by sowing it in the ground in the usual way. First, there was the uncertainty of being able to hit the proper time to sow it, when the soil was in a free and well-broken-down condition. Secondly, if fortunate enough to do that, there must be moisture enough in the soil to cause vegetation. Thirdly, fine weather must continue for some time after the seed has vegetated, otherwise it was quite certain that the slugs would carry off every plant, as they will quickly do while the Parsley is in the seed-leaf, and even much later.

However annoying slugs are to the grower of Parsley, I have found a means of preventing their attacks, and I can have good Parsley even in such soil as I have stated above.

I filled a quantity of small pots in which the bedding plants had been, using any rough materials, even what fell under the potting-bench. The Parsley was sown, and the pots placed upon coal ashes in a cold pit, which was then shut up. I kept them regularly watered; and as the young plants grew gave more air. The Parsley remained in these pots until the leaves were from 4 to 6 inches long; and it was then planted out in a piece of ground while in the course of digging, and the result proved worthy of all this care and trouble.—G. DAWSON.

HISTORY OF HEDGES.

THE earliest enclosures in England appear to have been in Kent and Essex, these being the first fields of Roman operations, and seem to have been formed of Hawthorn, Sloe, Crab, Hazel, Dogwood, &c., taken from the woods where they naturally grew. The earliest published account we have of enclosures is by Sir John Fortescue, who mentions the progress that had been made in planting hedges and hedgerow trees before the end of the fourteenth century; and towards the middle of the next we find the prelates and great barons enclosing land around their castles, which were called their demesne lands, which they kept in their own hands, and cultivated for their own use, much as our private parks are at the present time.

In 1523 Sir A. Fitzherbert wrote "The Book of Husbandrie," in which he points out the great advantage of enclosures, and recommends "quyck-settyng, dychyng, and hedgyng," and gives special directions about the "settes," and the manner of training a hedge. Hawthorn hedges are distinctly stated to have existed in the gardens around Windsor Castle in the reign of Henry V., and are described by James I., of Scotland, in his poem, "The King's Quair," written by him while he was a prisoner there. Hedge planting, however, made slow progress in England until after the introduction of the Flemish system of husbandry into Norfolk about the end of the seventeenth century; and so rapidly did they increase, that by the end of the eighteenth century they had entirely changed the face of the whole country.

Although we now see many excellent examples of hedge management in many parts of the midland counties of England, still, as a whole, such fences are inferior to most of those in the best enclosed districts of Scotland, where, however, the use of fences of any kind is of far more recent date. Major, a native of Berwick, says in "Historia Britannica," published in Paris in 1526, that the Scottish peasants "neither enclosed nor planted, nor endeavoured to ameliorate the soil" in his day. Indeed, until the breaking up of the feudal system about the middle of the last century, and the swallowing up of numerous small peniciles into larger holdings, the use of fences to any great extent in Scotland was both useless and impracticable—at least, so long as the "run-rig" system, as a united system of protection, was in use.

The first introduction of the use of hedges into Scotland was, strange enough to say, by the soldiers of Cromwell, who also at the same time introduced the use of the close-headed Cabbages. The first of their hedging was exemplified at Inch Buckling Brae, near Tranent, where so recently as 1804 the remains were to be seen in a line of aged Haw-

thorn trees, long since removed; and the next was at Tinnlarig Castle, near the head of Loch Tay, the "Domus Ultimus" of the Breadalbane family.

The earliest account of the propagation of hedge plants and their management even in England does not date prior to between three or four hundred years, and the published directions then given refer to their uses as protection merely to plantations, gardens, and small paddocks near the house; and that Holly plants were mixed with Thorns, both being procured from the woods, where they grew spontaneously. The rearing of such plants from seed was not practised even around London till shortly before the time of Evelyn; and in Scotland not till after the establishment of the nurseries of the Dickinsons at Hassenden Burn, near Hawick; the rearing of such plants is said to have laid the foundation of the great commercial houses of the Dicksons in Scotland.—(*Scottish Farmer*.)

[The writer in our contemporary is wrong as to the time of hedges being introduced into England. "A grove for making hedges is mentioned in Domesday Book (Middlesex, fol. 127). Hedges and ditches also are mentioned as boundaries in many Anglo-Saxon grants of lands. Moreover they were protected by law. If a freeman broke through a hedge he was liable to a fine of 6s. A ceorl was to keep his farm well enclosed both in winter and summer; and if damage occurred to any one from a neglect of this law, or even from leaving a gate open, the careless husbandman was liable to pay for the damage.—(*Wilkin's Leges Saxonice*, 4, 21.)]

ENTOMOLOGICAL SOCIETY'S MEETING.

THE August meeting of the Entomological Society was held on the 3rd instant, T. P. Pascoe, Esq., F.L.S., one of the Vice-Presidents, being in the chair. Numerous additions to the Society's library were announced, consisting chiefly of foreign publications presented by the Natural History and Entomological Societies of Moscow, Stettin, and Berlin, Messrs. Hagen, Brauer, Zeller, &c. An account was given of the entomological captures made by Mr. F. G. Waterhouse during his recent journey of exploration across Australia. Upwards of 2000 specimens had been captured chiefly in the northern half of the continent, comprising a great number of species (although apparently poor in the number of individuals), which evidently bore a greater general affinity to the insects of the islands of the Eastern Archipelago than to those of South Australia and Van Diemen's Land. The Rev. Hamlet Clark exhibited the species of Water Beetles captured during this expedition, consisting of seventeen species, of which no less than thirteen appeared to be new to science.

The Secretary stated that on carefully examining the silken tissue found upon a mass of Chicory exhibited at the last meeting, some specimens, much rubbed, of *Ephestia elutella*, a minute Moth, had been found, the caterpillars of which were doubtless the fabricators of the tissue.

Mr. Stainton exhibited some Alder leaves containing larvæ of the beautiful little Moth *Tinagma resplendella*, burrowing within the midrib or leafstalk. When young they impart a slight curve to the leaf, by which their presence may be detected. Subsequently they mine along one side of the midrib, returning by the other side, and finish by forming a blotch upon the leaf. Mr. Stainton added, that not only were the characters of the mines of leaf-mining Lepidoptera of high importance for the discrimination of species, but he considered that the mines exhibited characters of generic value, to which regard ought to be had in the future classification of the family.

Mr. Hayward exhibited the pupa and the perfect insect of *Ocyptus* after which he had succeeded in rearing from the pupa state, the larva having been found in a cavity in a piece of Elm wood. Entomologists had long been aware of the difficulty of rearing the insects of the family Staphylinidæ, to which the *Ocyptus* belongs.

Professor Westwood directed attention to the ravages committed on Willow trees in Essex by the Weevil *Cryptorhynchus Lapathi*, the larvæ of which had attacked some of the rarer species of Willow (making cylindrical burrows of considerable diameter and length in the stems) to such an

extent that the growers were in fear of the destruction of their plantations.

Mr. Douglas Timmens gave an account of the successful rearing of *Papilio Machaon*, *Thais Cassandra*, *Polyommatus Iolas*, and *Clostera Anachoreta* in winter, the chrysalids having been kept in warm situations, whereby their development had been accelerated. He considered that by this means it might be possible to rear and perhaps naturalise some of the exotic species in this country.

The Chairman announced the publication of the sixth volume of Lacordaire's *Genera of Coleoptera*, devoted to the tribes of Weevils (*Rhynchophora*). Mr. Wallace announced an intended expedition, for zoological pursuits, to New Britain, New Ireland, &c., by Messrs. Wilson, of Adelaide. The second volume of Mr. Trimen's work on the Butterflies of South Africa, with a number of plates illustrating new species, was also announced as nearly ready for publication. Memoirs by Dr. Baly, containing descriptions of new species of Chrysomelidæ, &c., by Dr. Stal, of Stockholm, containing descriptions of new genera and species of exotic Hemiptera, were read.

PROPOSED GARDENERS' BENEFIT SOCIETY.

It is very strange, after the propositions to organise a Gardeners' Friendly Society by some of the leading practical gardeners of England, that they do not form a Committee at once, and carry it into operation. I am sure if they did so there are hundreds in this country who would be only too glad to embrace the opportunity of giving all the assistance in their power to co-operate with their friends on the other side of the channel. I only hope it will be taken up at once with energy, for such a Society as the one proposed would be second to none in the United Kingdom if once established. I hope all members of the profession will raise their voice in its favour, for it is a Society very much wanted—D. PHELAN, *Gardener, Rathmines Castle, near Dublin*.

I HAVE been pleased to see that some of our craft are anxious to form us and our employers into a Society for our mutual benefit, and I am as anxious as any one can be to set the "ball rolling."

I can count over fifty gardeners in regular places within three miles from here, and I think we could form a lodge or district for these, with Ashton as a centre, and other districts would be forming outside this. Manchester would form several districts; for near that city are some hundreds of gardeners, and in Liverpool the same.

Now I think we can set the Society going if some half-dozen men can be brought together, to call a meeting—say in the anteroom of the Free Trade Hall, and request all gardeners and their employers belonging to Manchester district to attend, and the same in London, Liverpool, and other large centres.

I shall be most happy to meet at some convenient place any half-dozen or more gardeners to organise, first for a large meeting as suggested; and secondly, to prepare resolutions for the meeting to approve.

Details would have to be settled by a general Committee.

I have spoken to a goodly number of gardeners, and they all seem anxious we should form a Society. There are some things I shall strenuously oppose—such as having lodges at public-houses (though I am not a teetotaler); but these matters can be opposed if they appear.

My concluding advice is at the present, Let us gardeners be up and doing in the matter, and not standing listlessly by waiting for somebody to do it for us, remembering the old adage that "God helps those who help themselves."—JOHN HAGUE, *Gardener, Groby Lodge, Ashton-under-Lyne*.

GARDENING IN JAPAN.

WE have the pleasure of laying before our readers an interesting letter from Mr. Hogg. His many friends will be glad to learn that he is in the enjoyment of excellent health, and is industriously employed in exploring the country for rare and valuable plants, of which he has already gathered a very interesting collection. Some have

arrived in this country, and others are on the way. We are in the way of realising our expectations, that Mr. Hogg would very materially enrich our collections of ornamental and useful plants. If in doing this he could at the same time succeed in learning the Japanese the use of improved horticultural implements, and subdue some of their peculiar prejudices, he would be benefiting two nations at one and the same time :—

“Kanagawa, April 30th, 1863.

“MR. EDITOR,—Although much has been written extolling the climate of this country, my experience of it in the past winter confirms all that has been said regarding it. The change from living in a climate of at times almost arctic severity to one where the cold is just sufficient to bring about the delightful changes of the seasons, renders it a season of prolonged enjoyment, and really seems to add so many days to the span of life. In the northern and western parts of the country, where exposed to the cold blasts from Tartary, it is said to be much colder; but the ameliorating influences of the Pacific have a marked effect on the eastern coast. Since the heavy rains of October there has not been much wet weather until about a month past, and then not very continuous, and probably not more than necessary to sustain the growing crops in the porous soil of the country. The verdure of the growing crops gives a charming appearance to the landscape. The entire absence of fences between the fields gives a naturalness to the prospect that is, in a certain sense, delightful, but in another point of view does away with the idea of individual possession, so intimately associated in our minds with a homestead and personal prosperity. The yards surrounding the houses are usually enclosed with a rude hedge of *Cryptomeria*, *Retinospora*, *Althæa*, or some other strong-growing shrub. Their mode of trimming a hedge is very rough, and it is only occasionally that you see one at all neat and passable as a real hedge. I have never yet seen one clipped pyramidal.

“It seldom happens that there is sufficient frost to impede the working of the soil, and during the past winter not once; and there is no doubt it is owing to the fact of the frost not penetrating the soil to any considerable depth that so many plants that are hardy here prove too tender to withstand our climate. Very rarely ice is formed of sufficient thickness for skating. The soil is a deep, black, light loam, much resembling the soil frequently used for growing *Camellias* found in the ledges and at the base of rocks. Much has been said of its productiveness; but in this I think it is more owing to liquid-manuring continually applied than to any very great natural fertility. That this is the case is occasionally very apparent, by observing patches of grain in places where manuring has been neglected looking very stunted and yellow. These remarks apply only to the soil on the high lands, that in the numerous intervening valleys where Rice is grown producing large crops by irrigation alone. In places along the valleys, where the surface is too elevated for the purposes of irrigation, and yet too wet for growing cereals, a simple expedient is resorted to to bring it under culture for both, by laying it out in sections of the same width, about 30 feet, and convenient length, and then throwing the soil of every alternate section on the top of the adjoining one until of sufficient height. On the raised sections grain or vegetables are grown, and in the intermediate ones Rice. With you such lands are chiefly used as meadows for hay or grazing; but here, where little or no meat is used for food, every effort is used in raising grain for the support of the population.

“One drawback in gardening here is the want of proper native Grasses, in this respect resembling the Southern States. A lawn is a thing almost unknown, as I only know of one attempt in that direction within the limits of foreign residences. The Grass used is a native perennial one, but in the winter season turns entirely brown and loses its beauty. It is a very close, dwarf-growing species, and would be admirably adapted to the purpose were it to keep its colour the whole season. A former resident, lately returned, has brought with her a variety of our Grasses for the purpose as an experiment, and it is to be hoped some of them will prove successful, although I do not think the Japanese, with their love for miniature gardening, will appreciate them for some time to come.

“In common with the Chinese, all their notions of beauty seem to be in torturing into fantastic forms anything that will answer the purpose, making fish-ponds with miniature bridges a necessary accompaniment in every garden, rock-work, imitations of mountains, &c. In their way some of their designs are very pretty, and have a merit of their own not entirely to be condemned as a branch of art, and a pleasing appendage where it can be properly introduced. Of landscape-gardening, as understood with us, they seem to have no idea.

“At the present time the farmers are all busy preparing their Rice lands and sowing their seed-beds for transplanting. The labourers wade into the deep mud and bury the noxious weeds that have come up during the early spring by turning over the soil with a pronged hoe like your potato-hoe, when it is soon covered again by the water rising to the surface, rendering it level again. In one of my rambles I was witness of their mode of sowing the seed. The patches of land used for the purpose are prepared the same as the others, and the seed sown very thickly. After it is sown a man follows with a long-handled broom, like a birch-broom, and beats the surface until it becomes almost a liquid mass on the top. I was surprised to find the grain had all been sprouted until the roots had become an eighth of an inch long.

“Vegetable-gardening is yet in its infancy here; not that there is not quite a variety grown, but that they seem to have no appreciation of the advantages of prolonging the season of any particular kind by forcing, or cultivating earlier and later varieties, or successive sowings. Peas sown in the fall are now becoming plentiful; but when this crop is gone that is the end of them for the season. The same also with Lettuce, now entirely gone. Carrots have been very abundant and fine all the winter. Another vegetable they grow, called the *Dy-ku*—a name applied to all the Radish kind—is much used among themselves. Large quantities of it are dried or pickled for winter's provision. It is of the Radish kind, only very large, averaging 18 inches, and as large in diameter as the top end of a large Parsnip, not, however, tapering, but terminating abruptly. It is pure white, having somewhat of a turnip flavour also. Whether it has been introduced since the country has been opened to foreigners I am unable to say, but it is hardly possible that its culture would become so universal in so short a time, besides never having seen it previously, although it might have been introduced from Europe. The same might also be said of Tomatoes and Egg Plants, which I saw extensively cultivated in the neighbourhood of Yedo, both of very small size. Whether they are a portion of the seeds distributed at the time of Perry's expedition, or whether they have been cultivated for years past, is a question I am unable to determine. If they are, they have allowed them to sadly degenerate. The question might be asked ‘What became of those seeds and others presented since? Were they diplomatically received with bows and thanks and then quietly cast aside, or really put to practical use?’

“The implements of husbandry are of the most primitive and simple description and few in number. The principal one is a large heavy grub-hoe, in common use for all purposes. It is either made of wood shod with iron, or in the better kind, the blade is made entirely of iron. The blade is usually about 15 inches long and 6 to 8 broad, having a short handle as in a common grub-hoe. It is an unwieldy implement, but answers pretty well in their light soil. The difficulty attending its use is, that the worker is continually treading-down the newly-turned soil. Until some bold innovator changes the custom of going barefoot, or at least wearing something more substantial than straw sandals, the advantages of a spade cannot be turned to practical account. They have an implement somewhat resembling a spade, having a long blade without any shoulders for resting the foot. For what particular purposes it is used I do not know. These, together with the pronged hoe, the sickle, a fanning-mill (consisting of a simple wheel in a box resembling the one in use with you), and an instrument like a small road-scraper, made of bamboo with an iron blade in front, and used for raising earth from deep trenches, are about all that are used. Gardeners have very neatly-made sieves either of bamboo or wire in addition to the above.—T. H.”—(*American Horticulturist*).

CYCLAMEN CULTURE.

In reply to "A COUNTRY CURATE," we recommend seedlings of *Cyclamen persicum* to be allowed to grow as long as they will without receiving any extra stimulant in the shape of more heat. Give them water so long as they continue to grow, keeping them on the shelf of your greenhouse; but when new leaves cease coming from the crown, the plants assuming a standstill aspect, turn the pots on their sides to make sure of their not being watered. Keep in the full sun until all the leaves are off, when they may be placed close together on a shelf in a cool part of the greenhouse. We do not advocate shaking them out of the soil and storing the bulbs in sand, certain as we are that it has a tendency to weaken the bulbs. We should not be surprised if the seedlings continued to grow on through the winter until the beginning of May next year, when you must gradually withhold water and have the bulbs thoroughly ripe by the beginning of June, the pots then to be set aside in a cool place without water until the end of August.

At that time pot the plants singly, choosing pots about twice the diameter of the bulbs. Drain well; at least one-third of the depth of the pot should be filled with broken pots or sifted ashes, covered with a thin layer of sphagnum moss or cocoa-nut fibre. Use a compost formed of equal parts of turfy sandy loam and leaf mould, with a sprinkling of silver sand.

The bottom of the bulb should do little more than rest on the soil, and not be buried beneath it; but the crown of the bulb ought to be level with the rim of the pot, its bottom just within the soil, which leaves room for watering. Water sparingly until the growth commences, and as it increases give more water. Place in a light and airy situation, for if kept in a close, damp, or dark place they will never flower.

In after-seasons when the plants die down turn them into the open border of the garden, allowing them to remain until the nights begin to be chilly toward the end of September, when leaves very often are appearing and flowers rising. Pot forthwith, place on a shelf in the greenhouse, and you will have *Cyclamen persicum* in bloom all winter. Yours, however, may be the evergreen variety, by no means so rare as is represented, and if so, you will pot in August of each year and have flowers all the year round; but if evergreen they need a rest, and that is done by giving less water from June until September.

Having thus answered the inquiries of our correspondent, we will add a little information about various kinds of this favourite genus of "plants with the petals combed back," as a lady described them.

"The origin of *Cyclamen Atkinsi* is thus explained to us:—

'After many ineffectual attempts,' writes Mr. Atkins, 'to produce a good cross between *Cyclamen coum* or *C. vernum*, and *C. persicum*, combining the neat habit of the two former with the colour and larger petals of the latter, having at the same time the foliage dark, yet relieved with a lighter band'—I at length succeeded in raising

the hybrid now figured, from seeds produced by a variety of *C. coum* impregnated with *C. persicum*, and this, I have every reason to believe, I shall be able to perpetuate, and thus introduce a new and most interesting feature into this beautiful family of plants. Amongst the seedlings, it was found that every plant deviating in the marking of the foliage from the seed-bearing parent, produced white or blush flowers, whilst those retaining its plain dark leaf have invariably bloomed with different shades of the colour of that species.'

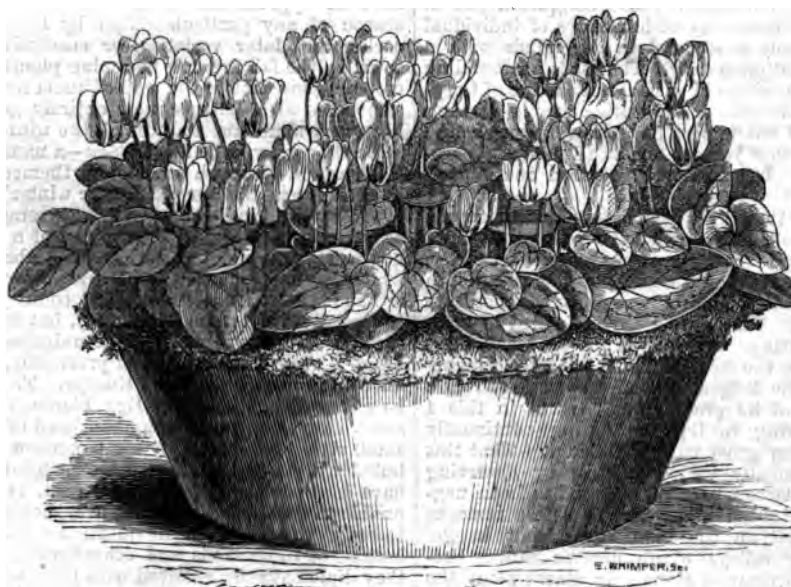
"This account of its origin perfectly explains its appearance, it being, in fact, exactly intermediate between its parents as to size and form, and to some extent even in colour. The specimen which our vignette represents was exhibited with about seventy fully-expanded flowers, and bears full evidence of the success of Mr. Atkins' mode of culture.

"In *Cyclamen Atkinsi* the leaves are large (2½ by 2 inches), ovate obtuse, cordate at the base, with a deep sinus, the sides of which overlap, dark glossy green, with an irregular pale zone within the margin; the under surface is liver-coloured, or dull purple. The flowers are elevated on longish verrucose stalks, and are of a French white, marked with

a deep crimson ovate blotch at the base of each segment; the calyx consists of five acute lance-shaped pubescent segments; the corolla has a short globose tube, and a limb of five broadly obovate segments nearly seven-eighths of an inch long; the mouth of the tube is nearly circular, the angles being indistinct; the stamens are included, but the style equals the tube. The flowers are scentless.

"*Cyclamen ibericum* produces flat heart-shaped leaves, having an open sinus, and the margin very slightly sinuate-dentate or entire; they are deep

green, with an irregular heart-shaped belt of pale greyish-green some distance within the margin, the veins sunken on the upper face, prominent and green beneath, on a dull reddish-purple ground. The flowers vary in colour; in some, they are pale rosy or flesh-coloured, in other plants, deep rose-colour; in some they are white; but in all cases they are marked with a broad ovate spot at the base of the segments, which spot is either purple or crimson, and is extended in the centre as far as the mouth, which, in the front view, thus shows five purple bars or spots; the bases of the segments are curved outwards at the margin, the mouth thus becoming pentangular, with concave sides. The calyx lobes are acutely lance-shaped; the tube of the corolla is ventricose, the segments of the limb either roundish obovate or oblong obovate. The stamens are quite enclosed, and are slightly exceeded by the blunt, simple stigma, which is somewhat exserted."—(M., in *Garden Companion*.)



Cyclamen Atkinsi.

THE LATE FROSTS.—As I see the frost has been so general in England, I give you a short account of what it has been in Ireland. We had some very cold nights from the 18th to

the 26th of July. On the last-mentioned date the Potatoes were severely injured in low grounds. I notice that there is always an interval of four or five days between England and Ireland, so that when we hear of bad weather in England we may prepare for it here in a short time.—E. WELCH, *Palace Garden, Armagh.*

AMARANTHUS MELANCHOLICUS RUBER CULTURE.

HAPPENING the other day to take up a copy of your valuable paper, dated August 11th, I came upon the following remark respecting the new plant named at the head of this letter:—"It requires peculiar management, or you will fail with it. Sow in heat not later than the end of January," &c. The thought came into my mind that it is much to be regretted with that gardeners each believes that his own way of proceeding is the only correct one. They will not understand that there are several ways of doing the same thing.

"But what has this to do with the *Amaranthus*?" perhaps you will be inclined to ask. Why, just this. I have been a very successful grower of it this year, and yet I never did anything that the writer of the above extract declares to be necessary.

I heard of the plant, and sent for a shilling's worth of seed from Messrs. Veitch. On its arrival I thought I had very little for my money, and so I set to work to count my seeds, and I found that I had 115, each about the size of a grain of gunpowder. This was at the beginning of April.

Now, I do not possess a frame, and, therefore, sowing in heat is not in my line; but I raised it in the same way that I do many other plants. On the 10th of April I sowed the seed in a shallow box, and put a piece of glass over it. This box I placed on my kitchen-window seat, and as my kitchen is a warm one, the seeds soon germinated. At first I had about ninety plants, but some beetles destroyed a few by finding their way beneath the glass.

As soon as the plants were through the soil the box was placed in an orchard-house, which, being always open, is not so warm as a cold frame. When the nights were cold I carried the box in-doors. In this way the plants soon began to grow. I then pricked them out in small boxes, and placed them in the border in the beginning of June. They did not not make much progress at first, but towards the end of July they grew rapidly, and the best of them are now 15 inches high. They have grown very evenly, and are very effective in the garden.

I have written this just to show that a great deal may be done with very small means, and with a hope that I may encourage others to follow my example.—W. M. A.

STRAWBERRY CULTURE.

VARIED has been the information we have received by the late discussion in these pages upon the cultivation of the Strawberry; but before the subject shall be again shelved for a season I wish to detail a little experiment I made lately, not wishing to attach to the same any very great merit, though it would seem rather original.

Having come to a determination about midwinter, some two years ago, to entirely renew a fruit-border we have here at the base of the north wall—in which, in fact, are the fruit trees and also four rows of Strawberries, which we depend upon for our latest out-door picking—I was at a loss how to proceed with the Strawberry plants, as we had not prepared any younger ones to place in their stead. At last I came to the conclusion to try the removal of the plants, each with a good ball, from the old to the fresh-made border as we proceeded with each fresh trench. Fortunately the soil they were in was a tolerably good stiff loam; this aided materially in the removal, for after having formed a very slight hollow upon the surface of the fresh-made soil, we removed each plant separately with the spade, taking care to press it down firmly, and yet not to bury the crown too deeply.

I am pleased to say that last year and especially this, though our crop of Strawberries was exceedingly good, yet

none were better or fruited more abundantly than did those we removed, whilst the plants at the present time look exceedingly vigorous and healthy.

Thus, may it not be possible that, with the view of securing a greater amount of fruit from a certain piece of ground, it may at times be advantageous—(especially when, after three years' planting or so, the plants, though still looking luxuriant and well, may be supposed to have impoverished the ground below too much to render it probable that a good crop of fruit can be secured in the following season)—to keep the old plants with their strong healthy crowns in preference to chopping them up and throwing them away to make room for young ones? Where practicable, a continuous picking of fruit may be thus insured from the same plant for five years at the very least; and by adopting the system we would be independent of the trouble of procuring suckers and planting every three years. We always pick-off the first season's flowers, leaving but four years of real fruiting out of every six.—W. EARLEY.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Asparagus, see that the beds are kept free from weeds. *Artichokes*, cut down the flower-stems, and remove the dead leaves from the old plantations; those made last season will probably now produce a few heads. *Cabbages*, continue to plant-out for Coleworts at every favourable opportunity. Prick-out the young plants intended for the main spring crop. Sow, also, largely of the most approved sorts, for standing over the winter in nursery-beds. *Cauliflowers*, sow the principal crop for keeping over the winter. *Dwarf Kidney Beans*, give them an abundant supply of water if the weather continue dry and hot when they are in bloom, or most of it will drop off prematurely. *Endive*, tie-up, and also Lettuce, to blanch. *Leeks*, plant-out the thinnings of the seed-beds as soon as the weather is favourable. *Onions*, pay due attention to this crop, let them be removed from the soil as soon as they have ceased to grow; if left longer than this they frequently get mouldy, and do not keep so well. Let them be spread out in dry sheds till fit for tying in ropes. *Turnips*, the last crop for this season should be sown as soon as the weather is favourable for that purpose. Thin the advancing crops. *Vegetable Marrows*, keep the plants well supplied with water during dry weather; cover the ground about them with short grass or litter of any kind. At the earliest opportunity earth-up the Broccoli, Savoys, and all other crops that require it. Remove Peas that are mildewed immediately they are done with. Destroy caterpillars that infest the Brassica tribe before they do much mischief.

FLOWER GARDEN.

Keep the herbaceous plants neatly tied up, and cut-off the flower-stems of any that are becoming unsightly. Decay of some of the earlier flowers will now begin to leave blanks which will not be easily filled up unless a stock of large things in pots has been provided. In mixed borders some of the late kinds of Phloxes, Asters, &c., may occasionally be untied, and made to occupy three or more sticks in order to fill the blanks. Petunias and other bedding plants of rambling habits to have a pruning betimes to keep them within bounds. A few Crocuses, Snowdrops, &c., may be planted soon to obtain an early bloom. There is no grower who is in the least degree conversant with the cultivation of the Rose, but knows that an abundant supply of stimulating materials should be applied to the autumnal-flowering varieties to have them in perfection during the next two months. Without applying manure water in large quantities there will be nothing but disappointment this season: we would, therefore, urge the necessity of stirring the soil about the roots of the Noisette, China, Tea-scented China, Bourbon, and Perpetual varieties, and when this operation is finished giving the trees a good soaking with manure water; an abundant, strong, and healthy bloom will be the reward, and the plants themselves will continue for a greater number of years to throw up continually an abundant supply of bloom. If you have any spare ground sow some of the North American annuals—Clarkias, Nemophilas, and Collinsias are amongst the number, the seeds of which never

vegetate so readily as when recently gathered. Candytuft will also do to be sown now. Continue to plant-out Pinks as they strike root, bearing in mind that those which are put out now in the place that they are to flower in next season generally lace much better than those planted in the spring. Propagation of all the more important bedding plants should now be pushed on as quickly as possible; late-struck cuttings, as has often been remarked, are difficult to keep through the winter on account of not having a sufficient amount of roots and well-ripened wood. When the Scarlet and other Geraniums are struck in the open ground they should be taken up and potted as soon as they have made roots; they will require a close frame for a week or two, when they should be placed on a dry bottom in a southern exposure to harden them for the winter. While propagation is proceeding attention must be turned to the amount of winter accommodation, which, whether in the shape of frames, pits, or large structures, should be in readiness to receive the stock before bad weather sets in. Though more expensive in the first place, a series of brick pits from 5 to 8 feet wide will be the cheapest in the end, and if heated by running a four-inch pipe around them, mats may be dispensed with. Pits of this class would be also valuable during the summer for a variety of purposes.

FRUIT GARDEN.

The earliest Apples and Pears are to be gathered as they ripen. Early fruit more especially is the better for being gathered a few days before it ripens on the tree, as in the latter case it usually turns mealy directly. As Peaches and Nectarines now begin to ripen, it will be advisable to fix nets or mats to catch the falling fruit. A double row of stakes 3 feet long may be driven into the ground about a foot deep at about 8 feet apart, one row close to the wall, the other about 2 feet from it, and the nets or mats tied to the top of the stakes so loosely as to form an open bag. In this may be laid loosely a little moss, dry grass, or any other soft material; for fruit is at all times best gathered by hand, but after the strictest attention some will fall, and if something is not provided to catch them they will be bruised and spoiled.

STOVE.

The principal object should be to ripen the shoots by exposure to sunlight before the approach of winter. It is a great error to keep plants that are required to produce a profusion of bloom during the following spring and summer actively at work late in the autumn; summer is the season when rapid development should be promoted, and autumn the period when the young wood should be completely hardened and ripened preparatory to the approach of winter. *Gesnera zebrina* to be looked after, and shifted into a compost of equal parts of fibrous loam, heath soil, and leaf mould. *Euphorbia jacquiniæflora* should now meet with every encouragement.

GREENHOUSE AND CONSERVATORY.

Continue to look over climbers, borders, &c. Large specimens which have been placed out of doors to make room for other things will soon require housing; this, however, will depend greatly on the weather. Look well after late-flowering things. Late *Heliotropes*, Scarlet Geraniums, *Petunias*, &c., will now be somewhat pot-bound, and will in that state, with the application of weak liquid manure, produce abundance of blossom on a light shelf until the beginning of December. The usual quantity for a season's supply of the kinds of soil used in potting should be laid in as soon as convenient, and before the ground be sodden with the autumn rains; for even turfy soil should not be carted out and stacked up when saturated with water. The management of the conservatory will be more uniform now than in summer, no syringing will be necessary unless for a plant here and there which may require it for keeping down insects. Let all the watering be done in the morning, and give no more of it to any stove plants which are brought into this house for their bloom than just enough to keep them from flagging.

COLD PITS.

Young stock, intended to flower next season, to be exposed to the midday sun in order to ripen the wood, taking care not to do this so rashly as to injure the foliage. It is advisable after this season to be anticipating the approach

of winter, and to use every possible means to forward the growth of valuable hardwooded plants in order to have the wood firm and able to resist damp, &c., as soon as possible, and this is especially necessary where the plants have to be wintered in these structures. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

We have had a few slight showers that just refreshed the foliage a little, but which were raised from the ground by evaporation in a few minutes, and did nothing to speak of for our tanks and reservoirs. Did what we could to prevent crops suffering; but, with the little liquid at our command, could not keep Pea bloom from shrivelling and that of Scarlet Runners from dropping, though even these we hope to overtake in a day or two with sewage water. Sowed what we think will be about our last crop of Turnips, with Radishes between the rows, draining the drills and waiting for a shower slightly to damp them, or doing so with the rose of a watering-pot, so as to moisten the seeds. There is every appearance that there will be plenty of rain ere long. Planted-out Lettuces, Cauliflowers, and Endive, watering merely at the roots and shading. Sowed Lettuces, Cauliflowers, &c., for the first spring crop—merely a little of the latter. Thinned Turnips, Radishes, &c. Pretty well finished getting up Potatoes, which on the whole have been good, and noticed only one or two traces of disease. The kinds were all early ones and with small tops, so as to admit of close-cropping. Pulled up Pea-haulm when pretty well done with, and will have the ground dunged and rough-trenched for the last sowing of Onions and Spinach. Gathered most of the pickling Cucumbers, and will now care little about them. We did so badly with them out of doors last year that we placed a frame over them this season. The lights were left down whenever there was a chance of a shower, and now we want the frames for other purposes, so that the Cucumbers may do as they like.

Cucumber Disease.—We have been more or less troubled with the Cucumber disease for three years. This season it did not trouble us until about the end of June. We find there are no means of mastering it like young plants and frequent planting. We have tried change of temperature, change as to quantity of air, change of soil, from common garden soil up to peat; and now we find there is nothing that will keep it away after it has once made its appearance, though plenty of air and light, and not too much heat, and comparative dryness rather than wetness, will always lessen its violence. Nothing could do better than our Cucumbers in the early spring and early summer months. The results of two seasons convince us that if the disease makes its appearance there is little security afterwards, except in frequent planting. We have a strong opinion that whilst plants in airy houses—span-roofed, &c., with plenty of light all round them—will thoroughly escape, those in frames and low pits are apt to be seized. The most wonderful thing is that, from our own observation and experience, the disease will appear in one garden and it will not appear in a second where much the same mode of culture is adopted, even though there may be only a short distance between them, and then very likely the second garden will have it the following season and the first will escape altogether. Whenever the brown spot appears on the leaf, we know of no means of thoroughly eradicating it. A fruit or two may be slightly gummed, and yet the main crop be all right; but whenever such an appearance is observed, the fruit should either be taken away or else the gum rubbed off, and the place dusted with sulphur and charcoal dust. On the whole, then, when the disease manifests itself we have no remedies as to cure; but as to avoiding its presence we have no preventives equal to fresh air, fresh soil, using sulphur on the walls, a little clear soot or other manure water instead of manure of any kind in the soil, plenty of light if that should be subdued in the middle of the day, and rather frequent planting. If ever a spot shows itself it is wise to sow in another place or take cuttings from a healthy plant, but sowing is the surest.

Planted out strong plants in a pit for autumn supply, which, like the crop just bearing, are doing well; but there

is seldom any difficulty with the plants at first. We have sometimes had fine crops from plants approaching two years old, and we confess we are nonplussed to find how we cannot now carry the spring plants right on into the autumn. We seldom grow Cucumbers all through the winter now; but those who contemplate doing so should take their seedlings up without delay, pot them separately, and when planted out keep them nipped-in pretty well, and allow no fruit to remain until the plants are strong and well furnished with good healthy foliage. Such plants, if wanted to produce abundantly in December and January and onwards, should not be allowed to do much to distress themselves until December. For such purpose a span-roofed house or a steep narrow lean-to, is far superior to a low pit, though the expense for fuel will be greater; and with a bottom heat of about 80°, or from that to 75°, the top heat may fall to 60° at night, and the plants will do better at that in the dark days than if the temperature were higher.

MUSHROOM-BEDS.

Put the first little piece in the Mushroom-house. We were pleased to find that one of the best gardeners of the day, and who must have Mushrooms every day, adopts the plan we follow, of making little bits of beds constantly. By thus doing merely a few yards at a time there is less chance of failure; but when a large bed is made, and any casualty occurs, then, of course, the disappointment is proportionately large. For these small, shallow beds in-doors, nothing excels horse-droppings moderately dried, with a good proportion of short litter in it, and some good turfy loam, or scrapings and parings from the highway. We are always scarce of droppings, but we have just thrown a heap of materials together, which we are sure when slightly heated will make a first-rate article—such as two small loads of rather moist somewhat-spent dung, a good portion of which was horse-droppings, one load of fresh horse-droppings, one load of short dry litter, such as pigs will roll in under a shed, and from one to two loads of dry turf cut small, and road parings and scrapings. These were well mixed and thrown into a conical heap to ferment a little, and were covered with 4 inches of dry litter from the stable to hasten the fermenting process, and to keep wet and wind out. In a few days that heap will be in a nice condition for making shallow beds of from 12 to 16 inches deep. Of course, it would do equally well for larger beds, either in sheds or in the open air; but out of doors, as a large bed must be made for winter use, the materials need not be so nice. If the dung is prepared much as in our younger days we used to work it for Cucumbers and Melons, it will answer admirably, if well wrought, nice and moist, and sweet throughout. Such beds out of doors are best made in the form of a ridge or span-roof; the base, say, 3½ feet wide, rising to 3 feet at the point in the centre, the dung being laid on in layers, and firmly beat downwards and from the sides as the work proceeds. When the heat declines to about 80°, the sides should be spawned, and if the temperature continues all right then earth-up. Before performing the latter process, we used to put a layer of fresh droppings all over the bed, if even less than an inch thick, to feed the Mushrooms as it were. The soil we like best is rather stiff loam, from 1½ to 2 inches thick, well kneaded, and then beaten to a smooth surface. Such beds need covering at once to protect them from the weather, and the covering must be thick or thin according to the weather. The beds will do best when the heat in the dung will range about 70°, and the surface of the bed range from 55° to 60°. We have known beds suddenly exhaust themselves from overheating when the covering was not lessened in warm sunny weather in winter. If such a bed can be made in a shed, either as a lean-to or a ridge as above, it will be a great advantage in the way of covering, as rains and snows will be excluded. Such beds will often produce largely for many months, but for a continuous supply, where a little heat can be secured in winter, shallow beds are the most sure. Now is the time to prepare materials for these large beds, and for shallow ones too, in the case of those who want Mushrooms chiefly in winter.

SPAWN-MAKING.

We have just commenced making a bit. A few barrow-loads of fresh horse-droppings are collected, and then as

much cowdung, fresh, as when mixed and blended together will look like stiff mortar or grafting-clay. This, then, is squeezed into a mould of four pieces of wood, the same as that used for making bricks, and each brick of dung is placed as turned out on a board to dry, two holes being made in each for inserting the spawn when dry enough. Then it will be placed in a heap and covered with litter to cause the spawn to run. The gentleman referred to above suggests an improvement, which we think a very good one—namely, making the bricks of the length and width, but only about half the thickness of the common building-bricks. We can easily see that the pieces will dry quicker, and then that the spawn will sooner permeate or leaven the mass. We are just a little doubtful if these thin bricks will keep quite as long. Many use no mould whatever, spread the material on a hard bottom, beat it well, and then cut it out in the sizes that please them, with a clean sharp edging-iron. However managed, good spawn is an essential element of success, and the care that is exercised in this respect is fast causing the Mushrooms of our pastures to be tabooed for everything except ketchup.

FRUIT GARDEN.

Looked over late Melons to set the blooms. Gathered Peaches and Nectarines which come in orchard-house as fast as we need them. Have still a few Apricots out of doors not ripe, which shows how cold we are. Nipped the points of low standard Apple and Pear trees—that is, the young growth after the first stopping. Thinned Pears on such small trees, but still not nearly enough. Have been advised to try the pigs with them, but doubt if they will care for them now, though they would feast on them when ripe. Syringing in orchard-house because we are scarce of water. Plums are coming in from pots, but not evenly as respects the same kinds, as we observe that one Jefferson's has given us two dishes, with a great draught of air on night and day, and a lot more ripening nicely, whilst the same kind in a warmer place is still hard as bullets. Gave manure water to Strawberries in pots. The Victoria Plum in the latter place is also yet hard, though taking on its usual colour. Green Gages have ripened well. Have a little tree named so, but which, no doubt, from its lateness is Reine Claude de Bavay. Have not yet cleaned the Strawberry-quarters, but have picked out a number of the best runners we could find, and pricked them out on a rich border about 5 inches apart, the richness being confined to a few inches near the surface, and they most likely will be raised for forcing in March and April. At that time such plants with good large balls and firmly potted will answer well; but such a system would be of no use for obtaining Strawberries in February or March, or even the beginning of April. For such work the plants must be well established, and the buds ripened in the pots in which they are to fruit before the autumn.

ORNAMENTAL DEPARTMENT.

Potted lots of Primulas, Cinerarias, &c., for winter. Gave full light and air to Epacris to ripen wood and buds, ditto as to early-flowering Heaths. Deferred potting Poinsettias, Euphorbias, &c.—one small shift—for want of suitable pots. Fresh regulated conservatory, supplying with Fuchsias and varieties of Geraniums, and made tidy flower-beds out of doors. Find to our mortification that the dryness is making havoc with the Grandiflora Double Feverfew in the ribbon-borders. It was so strong we were obliged to bend it a little; but the flowers are turning dark, and not enough of fresh ones coming to keep up the mass. Believe it would have been all right if we could have watered, as it did well in other places last year up to the end of the season. However, we should be tempted not to trust it in the post of honour next season. A large single white Chrysanthemum, which we call a Chinese Daisy, would have defied all weathers unless there had been the dryness of the desert. The Feverfew may in a fortnight be all right again; but, if not, we can make the neighbouring rows fill up the space, and bury it out of sight if we like. Everything else has stood the dryness better than we could have expected.

Have commenced propagating for next season, and will now have a fortnight or three weeks of it. We wish we had a reserve-ground for plants for cuttings, we do so dislike breaking in on the flower-beds; but we cannot help ourselves. In most essentials the plans described by Mr.

Thomson are much the same as we adopt, with modifications according to circumstances. Our chief requisites are fresh sandy loam from the roadsides, or made so by the addition of road drift if we can obtain it, or other sand if not, and a sprinkling of silver sand for the surface. We make little difference whether we prick out the cuttings at once into frames, pits, small moveable boxes, or pots, large or small—we strike in all ways. We have commenced with Verbenas, and these chiefly white, scarlet, and purple. In taking them off we select nice stubby side shoots, and although there is more time taken at the bed, there is much less required at the potting-shed, and a lot of cuttings may be taken without at all disfiguring the bed. We prefer taking Verbenas first, because in September, though it is time enough to strike them, they are often liable to be attacked with thrips, and it is difficult to destroy it. Even now, when the small cuttings are made, we pull as many as we can hold in the thumb and three fingers through tobacco or sulphur water, and let them lie a short time on the bench before inserting them. This season, 60-sized small pots being most handy, we have used them for the first batch, placing a few crocks in the bottom of the pot, filling nearly up with the sandy soil, pressing down with a round board, and placing a little sand on the surface. These pots, a little more than 3 inches in diameter inside, hold about twenty cuttings. They will be placed on ashes or sand on the ground with a frame over them, as we dislike artificial heat if it can be avoided. One advantage of having them in such pots is, that if anything in the way of insects gets on them they can be laid on their broadsides and cleaned with the syringe. When we follow this plan we generally move the cuttings into a larger-sized pot in January or February, and head them across for cuttings ever so often. We never find room to single pot any, and we like spring-struck plants best. We will follow as fast as we can with Heliotropes, Anagallis, &c., and then with Scarlet Geraniums, and in October we will look out for Calceolarias, or perhaps a few in the end of September. Rolled the lawn and switched with our daisy-knife, as it is too bare for machine or scythe.—R. F.

TRADE CATALOGUES RECEIVED.

W. Cutbush & Son, Highgate.—*Bulb Catalogue for 1863.*
 William Paul, Waltham Cross.—*Select List of Hyacinths, Early Tulips, Gladioli, and other Bulbs.* 1863.
 B. S. Williams, Paradise and Victoria Nurseries, Holloway.—*General Bulb and Fruit Tree Catalogue.* 1863.

COVENT GARDEN MARKET.—AUGUST 24.

There is an abundance of every kind of vegetables. Peas are now or very nearly over, but a few parcels are still to be had. There is no scarcity of Grapes and Pine Apples, and of Melons there is an abundance. Filberts are plentiful. Potatoes are plentiful. Regents, 80s. to 100s; Shaws, 60s. to 80s. per ton.

FRUIT.

	s.	d.	s.	d.	s.	d.	s.	d.
Apples..... ½ sieve	1	6	2	6	Nectarines..... doz.	3	0	6
Apricots..... doz.	0	0	0	0	Oranges..... 100	5	0	10
Figs..... doz.	5	0	6	0	Peaches..... doz.	6	0	10
Filberts & Nuts 100 lbs.	40	0	0	0	Pears..... bush.	0	0	0
Grapes, Hamburgs, lb.	2	0	3	0	dessert..... ½ sieve	0	0	0
Muscats..... lb.	3	6	5	0	Pine Apples..... lb.	3	0	5
Lemons..... 100	12	0	16	0	Piums..... ½ sieve	0	0	0
Melons..... each	2	0	4	0	Quinces..... bush.	0	0	0
Mulberries..... quart	0	0	0	0	Walnuts..... bush.	7	6	0

VEGETABLES.

	s.	d.	s.	d.	s.	d.	s.	d.
Beans, Broad..... bush.	0	0	0	0	Leeks..... bunch	0	0	0
Kidney..... sieve	2	0	6	0	Lettuce..... score	1	0	1
Beet, red..... doz.	1	6	0	0	Mushrooms..... pottle	1	0	3
Broccoli..... bundle	0	0	8	0	Mustd. & Cress, punnet	0	0	0
Cabbage..... doz.	0	6	1	0	Onions..... bunch	0	0	0
Capicums..... 100	0	0	0	0	pickling..... quart	0	0	0
Carrots..... bunch	0	6	0	8	Parsley..... bunch	0	3	0
Cauliflower..... doz.	3	0	4	0	Parsnips..... doz.	0	0	0
Celery..... bundle	1	6	2	0	Peas..... bush.	0	0	0
Cucumbers..... each	1	0	1	6	Potatoes..... sack	4	0	5
pickling..... doz.	2	0	3	0	Radishes doz. bunches	0	0	0
Endive..... score	1	0	2	0	Rhubarb..... bundle	0	0	0
Fennel..... bunch	0	0	0	0	Savoy..... per doz.	0	0	0
Garlic and Shallots, lb.	0	8	0	0	Sea-kale..... basket	0	0	0
Jersey & Pampk., each	0	0	0	0	Spinach..... sieve	1	6	2
Jersey..... bunch	0	3	0	0	Tomatoes..... ½ sieve	0	0	0
Jersey..... bundle	1	6	4	0	Turnips..... bunch	0	6	0

TO CORRESPONDENTS.

POPULAR OF RAPID GROWTH, &c. (M. A. B.).—We fear that your "green fly" is the thrips, but in either case fill the pit with tobacco smoke, covering the lights to keep it in. Do this two nights in succession, shading from bright sun. The leaves should be dry at the time of smoking, but a sprinkling of water over the foliage in the morning after the operation will help to destroy the pests. The Black Italian Poplar is a rapid grower, and so is the Balsam, but no Poplar grows so fast as the Ontario. Unless your garden is wet they will not thrive long. We live in a smoky atmosphere, and are dreadfully pestered with windows that, like eyes, are continually upon us, and in order to shut-out these we made a plantation of Italian Balsam and Ontario Poplars, with a sufficiency of Limes and Elms. The Poplars from 12 feet at the time of planting attained a height of 25 feet in five years; but they are now dying at the top, and will soon give place to the Limes and Elms, which are better able to stand the smoky air of towns than Poplars, which like moisture above as well as below. Lombardy, Abele, and Aspen stand smoke better than any Poplar we have tried. We would plant a row of Black Italian as large as we could procure them, and a row of Limes in front, so that by the time that the Poplars are dying the Limes will be ready to take their place. You will not be able to procure Poplars we fear 30 feet high in any nursery; at least, we do not know of any place where they may be had. Such extra-sized trees are best found by visiting some large nursery, or by inserting an advertisement in a gardening journal.

COCOA-NUT FIBRE DUST (D. H. C.).—Light fresh loam should be mixed with the dust for potting. Two measures of loam to one measure of the dust.

DOUBLE-FLOWERING PEACHES BECOMING SINGLE (E. O. B.).—A very likely cause of your Peach blossoms becoming single and bearing fruit is, that the soil in which the trees is growing is too poor and light, and the south exposure may have something to do with it, a double flower being simply one in which stamens and pistils are exchanged for petals; and, therefore, if your Peach lacks nourishment at the root, and is exposed to a hot sun, the tendency to single flowers and fruitfulness is sure to be the result. Many of our double-flowering bulbs—such, for instance, as *Narcissus*—become single when grown for a length of time in a poor dry soil. Try what partially lifting your Peach and substituting very rich soil will do for the continuance of double flowers.

LIQUID MANURE FOR ROSES (Idem).—The frequency and quantity of liquid manure applied to your Roses must be entirely guided by circumstances. If they are growing in a poor gravelly soil from which water soon drains away, you may for the next month, if the weather be dry, apply it every day in a weak state. It is, however, better to give a good soaking at intervals, and mulch the surface of the soil to prevent evaporation. If your Roses are in a strong adhesive loam, the applications of liquid manure will, of course, not be so much required. We always prefer frequent applications in a weak state to stronger ones at longer intervals.

HEADING-BACK AFTER BUDDING (Idem).—No doubt the bending of the shoots will to some extent check the flow of sap to the point of the shoot and throw it back upon the bud. We would, however, prefer shortening the growth in the usual way. The time and attention required to remove the lateral shoots will be very trifling, and will not be so great as would be required in bending the shoots at first.

WHITE LILIES—BRUGMANIA ARBOREA NOT FLOWERING (M. F.).—The term "White Lilies" is so perplexing an appellation that we are rather at a loss to know exactly to what plant our correspondent refers. It would save a deal of perplexity if in asking for such information more particulars were afforded, and if the proper botanic names were given to plants instead of the popular ones of which, in many cases, this being one of them, the same name is applied to several. We, however, suspect from our correspondent's having basins of water formed round the Lilies that they are Water Lilies. It is not very easy to determine what may have been the cause of their flowering weakly. We have always observed that the common *Nymphaea alba* and *lutea* have always thriven with the greatest luxuriance in clayey soils—i.e., in pieces of water where the bottom has been of clay, and if the Lilies in this case are in a light material, we would recommend that soil of a heavy nature be substituted. They are not generally shy in flowering, and, perhaps, this may not be the cause. Perhaps by some means the foliage may have been prematurely destroyed, and that would affect their flowering and cause them to be altogether in a weaker state. If the wood of your *Brugmanias* is, as you state, good, perhaps a little more time may cause them to be productive of flowers as well as your neighbours, who may, perhaps, have started his plants into growth earlier than yours, or may, perhaps, have kept them a little warmer. Generally they are very sure in blooming, and if yours do not flower this autumn it would be difficult to say what has been the cause. The only way that you are likely to cause them to flower is to keep them healthy by a plentiful supply of water when they require it, not to keep them in the shade of other plants—such as climbers or Vines, and to keep the foliage free from red spider, to which they are often subject. If they have made as good wood as usual, it is not too much to hope that they will flower this autumn yet. We have grown excellent flowering plants of this *Brugmania* from cuttings struck early in spring and grown on quickly and exposed to plenty of light in stove heat. By September they make fine strong plants in ten-inch pots, in which if well supplied with water they form very handsome plants, bearing plenty of flowers, and few plants are more picturesque and beautiful.

ARCTOTIS REPTANS AND DIANTHUS HYBRIDUS MULTIFLORUS—PROPAGATING ALYSIMUM SAXATILE VARIEGATUM (Mrs. W.).—The two former of these should prove hardy in your climate. The *Alyssum* is usually one of the most easy plants to propagate. The quickest and probably the surest way of striking it at this season is to well drain a pot or seed-pan, or even a wooden box, then fill up to within 2 inches of the rim with soil composed of half loam and half leaf mould, and fill up with the same compost and sand in equal proportions, sifted fine for the insertion of the cuttings. In selecting the cuttings take the stubby side shoots that have not yielded blooms, and after being prepared in the usual way insert them about half an inch apart in the pots or pans, and place them in a pit or frame in which there is not much artificial heat, where if kept close and shaded they will root, at least they invariably do so under our care.

SEEDLING TROPÆOLUM (Bunyard & Son).—Your seedling is not unusual. We have seen it in several places this season, and we doubt very much if it possesses sufficient merit to warrant you in distinguishing it by any particular name.

SEEDLING CARNATIONS AND PICOTEES (Mrs. Leest).—They are very bright-coloured and pretty, and will render a border gay, but they do not possess the characteristics required by florists. We have had several smaller boxes of specimens raised from seed bought of Messrs. Carter.

CALCEOLARIA (C. D., Westmeath).—As far as we can judge your plant is *Calceolaria Aurea floribunda*, but if you act wisely you will not depend on the mildness of the last winter as any security for the plant living out in the winter that is to come. You had better take cuttings in the end of September.

SCARLET GEM MELON CRACKING (W. A. Blake).—Your Melons crack because you give them too much water when they ought to be ripening. After a Melon begins to net it needs no water beyond that necessary to keep the leaves from flagging. After so much bright weather as we have had lately a great many Melons have cracked, for the simple reason that bright sun tends to early maturity; under it the rind of the Melon becomes hard, and when cloudy weather sets in the Vines grow more freely, impelling more matter into the fruit, which being rendered hide or rind-bound by the influence of hot sun refuses to expand, and literally cracks to make way for the increased amount of nourishment driven into them. It is hopeless to expect such Melons to swell any more after a month of bright sunshine; therefore, the atmosphere should be kept dry, and less water by half given in dull than in sunny weather. The Melon requires as much water as a Cucumber from the time of setting until it begins to net, and after that it can hardly have too little. Our Scarlet Gems this year are smaller than common, but exquisite in flavour. Keep the atmosphere of your frame dry by leaving a touch of air on all night, and give no more water at the root.

IPOMEA LEARI (J. Knottley).—Both plants may be correct, for the leaves vary in form. There is a coloured portrait of the plant in Paxton's "Magazine of Botany," vi., 267; and in the description there given, it is said:—"Leaves variable, most frequently cordate (like your small leaves), but often unequally, and sometimes distinctly three-lobed" (like your large leaf).

No. 51 (W. D.).—This Number is out of print. Our correspondent wishes to know the direction of Mr. Henderson, lately gardener at Dunkeld, as in our correspondent's neighbourhood directions how to fill Mr. Henderson's "Patent Broom-head" are much desired.

WALNUT TREE UNHEALTHY (E. C. T.).—Had it been the blossom only of your Walnut tree that dropped at the end of May, we should have said that it was occasioned by the frosts we generally have in that month, and to which last May was not an exception. But when you tell us the leaves also fall and the shoots are decaying, there is no doubt but that the roots have got into bad soil. It is not the horizontal roots you must examine, but those that go down vertically into the ground, and for this purpose you must search right in under the trunk.

INSECTS ATTACKING LETTUCE AND BEET (H. Bencke).—The insects at the root of the Lettuce are a species of aphides (*E. Lactuce*). Their extirpation is attended with great difficulty from their underground habits. If the earth be carefully moved round the crown of the plants and then lime water introduced, it would, probably, be successful. The Beet leaves are infected with the mining larvæ of the *Anthonomya Betæ*, a two-winged fly very like the common house fly. We can only recommend pinching the leaves in the infected parts when the grubs are at work, or if the leaves are badly infected they should be pulled off and burnt. This will prevent the subsequent broods which succeed each other very rapidly.

INDIAN CORN (Laz).—You would most likely obtain the kind you name by applying to any of our agricultural seedsmen. If they cannot supply you we do not know who can. It is not our practice to recommend one trader in preference to another.

BOUQUET (Miss Landon).—We regret that we cannot deviate even in your case from our rule of not replying privately to questions that may be put to us, nor do we suggest arrangements for adoption, though willing to give our opinion on those which are submitted to our inspection.

GERANIUM CLOTH OF GOLD.—A North Briton having read in Mr. Adey's remarks on bedding-out at the Crystal Palace, that this variety is easily propagated by leaves, will be obliged by Mr. Adey's informing him how and when the leaves are put in.

NAMES OF FRUIT (F. H. A.).—Your Apple is the Belledge. (*E. J., Manchester*).—Your Grape is Muscat of Alexandria. (*W. W.*).—We regret we cannot name fruit in such an immature state as those are that you have sent.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (*A. B.*).—Your Ferns are—1, *Chelanthus Dicksoniana*; 2, *Nothochloena distans*; 3 and 4 appear to be small bits from *Lastrea cristata*, the Crested Fern; 5, *Lastrea dilatata*, broad prickly-toothed Fern; 6, *Polydictum angulare*, the angular or soft Prickly-shield Fern. (*J. C.*).—*Rhus cotinus*, a deciduous hardy shrub about 6 feet high. (*J. A.*).—1, *Doodia media*; 2, *Doodia caudata*; 3, *Pilea muscosa*; 4, *Nothochloena lanuginosa*; 5, *Centradenia rosea*; 6, *Colius Verschoffii*. (*C. P.*).—*Pteris heterophylla*, or Various-leaved Fern. (*F. C.*).—*Külreuteria paniculata*. (*H. B.*).—*Asclepias curassavica*. (*W. H. M.*).—1, *Cystopteris fragilis*; 2, *Asplenium fontanum*; 3, a luxuriant specimen of the *Ceterach officinarum*, var. *crenatum*. (*E. M., Sandy Mount*).—It is not the Pansy you name. The other plants were smashed by the post-office puncheon. (*H.*).—Your plant is *Epipactis latifolia*. Can you send us a living plant carefully dug up with a ball of the soil round it? If so, you will oblige. (*Alethea*).—Not a Lichen, but a *Hepatica*—*Marchantia polymorpha*. (*Mrs. Atkin*).—*Marthodium semifrugum*. Probably found wild near Dublin.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

COOKING OLD FOWLS.

We have told you which fowls to kill; we have told you how to kill them; we have endeavoured so to advise that you shall have them tender, yet sweet, in the hottest weather,

and we thought that was enough. It seems not. We have a very melancholy letter from "A RECENT SUBSCRIBER," who complains we deal only with her young poultry. She would like to know what she is to do with the old. We have told her hens do not lay in the winter. She has sent some to market twice, but either from the time of year or because they are in such bad plumage no one would buy them. Her letter ends with the question, "What am I to do with them? How can they be made eatable?"

It is only in England a hen is considered almost useless (except in regular kitchens). In any other country she is known to be the most valuable adjunct to that useful receptacle, the stock-pot. Go into the meanest peasant's kitchen in France. On the hearth, in the braise, there stands the "marmite," not boiling, but simmer, simmer, always. The coarse piece of beef, thanks to this long and gentle treatment, comes out the tender and relishing bouilli, and the good woman would be too happy to have the despised hen. She knows the flavour, strength, and brightness it gives to the "potage" of the aristocratic table, or the humble "soupe" of the farm or cottage.

That is not the only way of dressing your old hen or cock. When you have one, two, or three of these that must be made away with, start for a razzia in your larder and pantry. The lean of that ham, the odd pieces that remain on the bones of beef and mutton, corners of fat bacon, any scraps or pieces, nothing comes amiss: therefore, if you have none, buy some scrag or flap of mutton, coarse pieces of beef, three-cornered remnants of any food. Cut your fowl or fowls into joints. Cut also your meat into moderate-sized pieces. Season to your mind. Get an earthen pot, or terrine, with a lid to it, cut some thin slices of bread and cover the bottom and sides of the pan with them, then cut your bacon into as good slices as you can, and lay them on the bread. Then begin the artistic work. Take your pieces of meat and poultry and lay them as you will—make a mosaic. No skill is required, all that is necessary is to fill the vessel with meat. You are like Sydney Smith's cook and her puff paste, it cannot enter your head you are doing wrong. When the vessel is filled with meat, pour in water (gravy is better), until all the crevices are filled up with it. Put on the lid, tie it down, put it in a slack oven for eight or ten hours, and when it is cold eat it. You will like it, the water will be turned to jelly, and the odd pieces of meat will look as if they were set in transparent gold. This is a better winter than summer dish, but it is always excellent on the breakfast-table. It will do good service on the sideboard when unexpected company drops in. It is good for a fishing party, a pic-nic, or a shooting luncheon. In fact, the old hens will be found good food.

EXPERIMENT ON CHILLING EGGS.

I now give the result of the sitting of eggs named in a former communication to your Journal. Two chillings of eggs extra have occurred, which I think further proves that eggs are not very easily spoilt by a hen leaving her nest, at least in warm weather.

The course pursued was as follows:—Hen sat on nine Cochon eggs at ten o'clock at night Tuesday, 28th July. Time of hatching, 18th August.

July.	No.
29, Wednesday.....	1 taken away at 10 o'clock at night, replaced at 10 o'clock on following morning.
30, Thursday.....	Hen on nest at 4 o'clock in the afternoon, at 10 o'clock on another nest.
31, Friday.....	2 taken away at 10 o'clock at night, replaced at 10 o'clock on following morning.
Aug.	
1, Saturday.....	3 " 10 o'clock " 10 o'clock
5, Wednesday.....	4 " 10 " " 10 "
7, Friday.....	5 " 10 " " 10 "
10, Monday.....	6 " 10 " " 10 "
12, Wednesday.....	7 " 10 " " 10 "
14, Friday.....	8 " 10 " " 10 "
16, Sunday.....	9 " 10 " " 10 "

Wednesday morning, the 19th, Nos. 3, 4, 8 hatched.

Wednesday night, at 10 o'clock, Nos. 1, 2, 6, 9 hatched.

Thursday morning broke the two remaining eggs, Nos. 5 and 7. Both had full-grown chicks in them, dead.

After the hen had been sitting twenty-four hours I took No. 1 away, and it was chilled for twelve hours. I saw the

hen on the nest the following day at four o'clock; and at ten o'clock at night, intending to take egg No. 2 away as I had done the preceding, I found her on another nest, the eggs quite cold. I placed her on the nest again. On the following night I took egg No. 2 and returned it in the morning, and at the same hours as with No. 1. The hen sat well until Friday, the 14th, when at night I found her sitting so light on the eggs that all the outside ones were almost cold, the inner ones tolerably warm. On Saturday morning, the 15th, the hen sat on the edge of the nest and all the eggs were quite cold. I again placed her on the nest, and she afterwards sat close. Her time of hatching would be Tuesday, the 18th, on which night I found one egg chilled. More might have been so, but I did not wish to disturb her. On Wednesday morning I found three hatched, and at ten at night I found four more hatched. Being so late in the season and not caring for the chickens, being only an experiment, I broke Nos. 5 and 7, in which were full-grown chicks, dead. No doubt these had been from under the hen, one of these eggs (No. 5) having been chilled on the 7th of August and No. 7 on the 12th. Had that affected them they could not have been full-grown chickens. Than the seven chickens hatched I never saw stronger.

In addition to the above, I had an opportunity of trying whether an egg not impregnated would addle as my Bantam eggs before-named had done. A hen with chickens in a compartment of my aviary laid her first egg, no male bird being with her. This I placed under the sitting hen on Monday, the 10th. On the 20th I broke it, and found the white and yolk perfectly separate, as in a fresh-laid egg, the only difference being a slight cloud in the centre of the yolk. —EVSHAM.

DRIFHLINGTON AND ADWALTON POULTRY SHOW.

It is the ninth annual meeting of this Society that is just concluded, and it gives us pleasure to state that its excellence has been progressive. Although during the time of this Society's existence the Committee have frequently had serious drawbacks from the most unfavourable weather at their annual meetings, nothing daunted they have persevered, and certainly, though not a very extensive exhibition, this year's Show, in point of excellence, would bear very favourable contrast with many of our local poultry meetings.

There are, nevertheless, some of its rules that are quite open to improvement, none more so than the issue of catalogues prior to the awards of the Judges. At Drighlington catalogues were publicly sold about the streets many hours before the arbitrations commenced. This error is always fraught with objections, and as invariably offers a plausible opportunity for cavil to disappointed rivals, though no such instance met our ears in this particular case. The remedy will be very easily effected on future occasions by refusing to issue any catalogue whatever until the awards are completed.

In *Spanish* the only birds requiring particular remark were the two winning pens, adults first, chickens second. Both pens were exceedingly good and well shown. Strange to say only a single pen of *Grey Dorkings* were shown, but they were very good. In *Cochins* the result was even still more unexpected, not a single entry taking place, which perhaps is the only instance recorded at any of our public meetings in this now almost universal breed. The *Game* fowls of all varieties were well shown, and some of the *Brown Reds* were unexceptionable. In the *Hamburgs* we anticipated seeing a superior collection, nor were we disappointed. In these birds, however, Miss Emily Beldon quite ruled the roast, taking with a single exception all the *Hamburg* prizes; indeed, all the fowls of whatever varieties shown by this exhibitor were so unusually good that she monopolised about twenty prizes besides commendations for her entries. The *Polands* were as good as we have seen for years past.

The class for *Aylesbury Ducks* was comparatively a failure, though the winning pens of *Rouen* were superior ones. The great feature of the Show was a competition for single cocks of any kind in one general class. A magnificent Golden *Poland* took first prize, a superior *Spanish* cock second, and a *Poland* realised third position, the

fourth fell to a *Brown Red Game* cock, the fifth prize was awarded also to a *Brown Red Game* cock, and the sixth to a *Golden-pencilled Hamburg*. This class caused much interest among spectators, and was decidedly the most meritorious part of the Drighlington Show. The weather very unfortunately in the forepart of the Show day was most unpromising, but towards the afternoon the long-looked-for change took place, the rain ceased, and the day's proceedings concluded under a brightened sky.

SPANISH.—First and Second, Miss E. Beldon, Gilestead, near Bradford.
DORKINGS.—Prize, Miss E. Beldon, Gilestead, near Bradford.
GAME (Black-breasted or other Red).—First, Miss E. Beldon, Gilestead, near Bradford. Second, H. Snowdon, Horton, Bradford. Highly Commended, Miss E. Beldon; J. Mason, Drighlington.
GAME (Duck-winged or other Grey or Blue).—First, J. Fell & Sons, Adwalton. Second, H. Snowdon, Horton, Bradford.
GAME (Black or Brassy-winged).—First, G. Hartley, Gomersal. Second, G. Noble, Staincliffe, Batley.
GAME (White or Pile).—First, J. Mason. Second, H. C. Mason.
HAMBURG (Golden-spangled).—First and Second, Miss E. Beldon, Gilestead, near Bradford.
HAMBURG (Silver-spangled).—First and Second, Miss E. Beldon, Gilestead, near Bradford.
HAMBURG (Golden-pencilled).—First, Miss E. Beldon, Gilestead, near Bradford. Second, F. Hardy, Quarry Gap, Bradford.
HAMBURG (Silver-pencilled).—First and Second, Miss E. Beldon, Gilestead, near Bradford. Highly Commended, J. Walker, Drighlington.
POLAND.—First, Miss E. Beldon, Gilestead, near Bradford. Second, D. Illingworth, Burley, Otley. Highly Commended, Miss E. Beldon. Commended, F. Hardy, Bradford.
ANY DISTINCT BREED NOT MENTIONED.—First and Second, Miss E. Beldon, Gilestead, near Bradford.
GAME BANTAM.—First, G. Noble, Staincliffe, Batley. Second, Miss E. Beldon, Gilestead, near Bradford. Highly Commended, Miss Bland, Drighlington.
BANTAMS (Any other variety).—First, S. Schofield, Hoakwoodwike. Second, Miss E. Beldon. Highly Commended, R. Ferrett, Drighlington.
GESEAR (English).—First, G. Yates, Westgate-Hill, Tong. Second, J. Hague, Crow Nest, Dewsbury.
GESEAR (Any other distinct breed).—Prize, G. Yates, Westgate-Hill, Tong.
DUCKS (Aylesbury).—First, H. Helliwell, Adwalton. Second, C. Holmes, Tong.
DUCKS (Rouen).—First, J. Rhodes, Tong. Second, J. Ward, Drighlington.
COCK (Any breed).—First, Second, and Sixth, Miss E. Beldon, Gilestead, near Bradford. Third, F. Hardy, Bradford. Fourth, H. Snowdon, Horton, Bradford. Fifth, H. C. Mason, Drighlington. Highly Commended, H. Snowdon; W. Bentley, Scholes, Cleckheaton; J. Fell & Sons, Adwalton. Commended, R. Farnhill, Carlinghow, Batley.

The Judge was Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, Birmingham.

ORMSKIRK AND SOUTHPORT POULTRY SHOW.

The seventh annual Exhibition of the Society was held at Ormskirk on Wednesday last the 19th inst., and was well attended considering the capricious state of the weather.

The poultry entries were more numerous, 108 pens being exhibited, and the quality better than at any previous meeting of the Society; in confirmation of which, among the exhibitors figure the names of Captain Hornby, Mr. Teebay, Mr. Stretch, Mr. Musgrove, Mr. Dixon, and other well-known exhibitors. Owing to the time of the year the old birds showed indifferently, especially in the *Cochin* classes. The following is a list of the prizes awarded:—

DORKINGS.—First, Capt. Hornby. Second, J. Blundell, Burroughs. *Chickens.*—Second, J. Holme, Knowsley. Highly Commended, P. Riley, Scarisbrick. First withheld.
SPANISH.—First and Second, R. Teebay, Fulwood. *Chickens.*—First, Capt. Hornby. Second withheld.
GAME (Black or Brown-breasted Red).—Second, W. Howard, Knowsley. First withheld. *Chickens.*—First, Capt. Hornby. Second, J. B. Rafter, Poulton-le-Fylde. Highly Commended, J. Eaves, Knowsley. Commended, Capt. Hornby.
GAME (Any other colour).—*Chickens.*—First, J. Holme, Knowsley. Second, J. Eaves, Knowsley. Highly Commended, J. Eaves.
HAMBURG (Golden-pencilled).—First, J. Dixon, Bradford. Second, T. Ridgway, Burroughs.
HAMBURG (Silver-pencilled).—First, J. Dixon. Second, J. W. Smith, Rivington.
HAMBURG (Golden-spangled).—First, J. Dixon. Second, T. Ridgway.
HAMBURG (Silver-spangled).—First, R. Teebay, Fulwood. Second, J. Dixon, Bradford.
COCHIN-CHINA (Buff).—First, E. Musgrove, Aughton. Second, T. Stretch, Ormskirk. Commended, T. Stretch. *Chickens.*—First and Second, T. Stretch. Commended, E. Musgrove.
COCHIN-CHINA (Partridge or Grouse).—First and Second, T. Stretch, Ormskirk. *Chickens.*—First and Second, T. Stretch. Highly Commended, J. B. Walthew, Aughton.
POLAND (Any colour).—First and Second, J. Dixon, Bradford.
GAME BANTAMS (Black or Brown-breasted Red).—Prize, E. Musgrove, Aughton.
GAME BANTAMS (Any other colour).—Second, J. B. Walthew, Aughton. First withheld.

BANTAMS (Any other variety).—First, J. Dixon, Bradford. Second, withheld.
GAME COCK (Any colour).—First, W. Boyce, Beverley. Second, J. S. Batten, Foulton-le-Fylde. Highly Commended, J. Bavea, Knowsley.
GAME.—First, J. Bryers, Ormskirk. Second, Capt. Hornby. Commended, R. Wright, Warrington.
DUCKS (Aylesbury).—First, J. Dixon. Second, T. Stretch, Ormskirk. Highly Commended, T. Stretch.
DUCKS (Rouen).—First, J. Dixon, Bradford. Second, Capt. Hornby. Highly Commended, T. Stretch, Ormskirk.
DUCKS (Any other variety).—First, J. Dixon. Second, F. W. Earle, Turkueta. First, Capt. Hornby. Second, J. Dixon.

ALDBOROUGH AND BOROUGHBRIDGE POULTRY SHOW.

THIS Poultry Show was held on the 11th instant. Some of the poultry was remarkably good. In *Spanish* Miss Beldon showed an excellent pen. *Dorkings* were very good, especially the chickens, which class was highly commended, the first-prize chickens being remarkably good. *Game* was only average. *Cochins* were good, but the chicken class was better than the adults, and the first-prize chickens were a very fine pen. All the *Hamborough* classes were above an average. The first-prize pen of *Polands* were good.

The *Geese* were not good; but the *Aylesbury Ducks* made amends, Mr. Kell taking the first prize both for adults and ducklings with birds that are hard to beat anywhere. The *Pigeons* were very good.

DORKINGS.—First, Rev. G. K. Holdsworth, Aldborough. Second, Miss Beldon, Gilestead, Bingley. *Chickens*.—First, — Kell, Wetherby. Second, Rev. G. K. Holdsworth. (Class Highly Commended).

SPANISH.—First and Second, Miss Beldon, Gilestead, Bingley. *Chickens*.—First, Miss Beldon. Second, F. Powell, Knarsborough.

GAME.—First, Miss Beldon, Gilestead. Second, J. Robshaw, Whizley. *Chickens*.—First, J. Robshaw. Second, Miss Beldon.

COCHINS.—First, E. Gatenby, Jun., Shipton (Buff). Second, T. H. Barker (Buff). *Chickens*.—First and Second, — Dewes, Knarsborough (Buff). Commended, T. H. Barker, Hovingham (Buff); — Dewes.

HAMBOROUGH (Golden-spangled).—First, J. Waddington, Minskip. Second, Miss Beldon, Gilestead. *Chickens*.—First, J. Apew, Cowthorpe. Second, Miss Beldon.

HAMBOROUGH (Golden-pencilled).—First, Miss Beldon, Gilestead. Second, — Eilerby, Helmsley. Commended, H. S. Hardcastle, Hunningsore. *Chickens*.—First, Miss Beldon. Second, J. Darbyshire, Whizley.

HAMBOROUGH (Silver-spangled).—First, Miss Beldon, Gilestead. Second, — Blenkhorn, Knarsborough. *Chickens*.—First, Miss Beldon. Second, Mrs. Gray, Boroughbridge.

HAMBOROUGH (Silver-pencilled).—First, Miss Beldon, Gilestead. Second, — Hardcastle, Hunningsore. Highly Commended, — Scollick, Bickerton. *Chickens*.—First, Miss Beldon. Second, — Kendall.

POLANDS.—First, Miss Beldon, Gilestead. Second, C. Marwood, Aldborough. *Chickens*.—First, Miss Beldon.

BAHAMA FOOTRA.—First and Second, F. Powell, Knarsborough. *Chickens*.—First, Rev. G. K. Holdsworth, Aldborough. Second, F. Powell, Knarsborough.

BANTAMS (Game).—First, Miss Beldon, Gilestead. Second, — Lamb, Great Ouseburn. *Chickens*.—First, J. Spencer.

BANTAMS (Gold or Silver).—First, Miss Beldon, Gilestead.

BANTAMS (Any other variety).—First, Miss Beldon, Gilestead. Second, J. Chapman, Great Ouseburn. *Chickens*.—First, Mrs. Stapleton, Myton Hall.

ANY OTHER DISTINCT BREED NOT MENTIONED.—First, Miss Beldon, Gilestead. Second, — Ingleby, Knarsborough (Golden Pheasants).

FARMYARD CROSS.—First, Mrs. Burton, Minskip. Second, J. Spencer, Aldborough. *Chickens*.—First, — Sudda, Aldborough.

TURKETS.—First, Mrs. Burton, Minskip Grange. Second, — Moorey, Mulwith. *Poult.*—First, — Moorey, Mulwith. Second, Captain Barnes, Thorp-Green Hall.

GESE.—First, C. F. G. Clark, Heaton House. Second, — Moorey, Mulwith. *Goats.*—First, A. Low. Second, — Clark, Heaton House.

DUCKS (Aylesbury).—First, — Kell, Wetherby. Second, — Young, Driffield. *Ducklings*.—First, — Kell, Wetherby. Second, — Clark, Heaton House.

DUCKS (Rouen).—First, — Barker, Hovingham. Second, — Young, Driffield. *Ducklings*.—First, Miss Graham, Aldborough. Second, — Sudda, Aldborough.

DUCKS (Any other variety).—First, Rev. J. G. Milner, Bellerby. Second, Mrs. Hewison, Norton-le-Clay (Indian).

GUINEA FOWLS.—First, — Webster, Moor Monkton.

PICCOLO.—First, — Trenam, Helmsley. *Carriers*.—First, G. Sadler, Boroughbridge. *Trumpeters*.—First, Miss Beldon, Gilestead.

JACOBINS.—First, Mrs. Sedgwick, Aldborough. *Fantails*.—First, Miss Beldon. *Dumblers*.—First, Miss Beldon. *Dragons*.—First, G. Sadler.

BIRDS.—First, Miss Beldon. *Nuns*.—First, Miss Beldon. *Any other variety*.—First, Miss Beldon.

RABBITS (Fancy).—First, I. Blade, Boroughbridge.

EXTRA STOCK.—First, Mrs. Hewison, Norton-le-Clay (Indian Ducklings).

The Judges were Mr. Hunter, Green Hamerton, and Mr. Scott, Boroughbridge.

TWO QUEENS IN ONE HIVE.

MR. LOWE talks of my fluent pen being ever ready to answer all inquiries and to solve all the doubts of the numerous parties who appeal to me for advice and information:

what will he now say when *Œdipus* himself confesses to being fairly posed? Will he come forward in his turn and with fluent pen solve the mystery at once? Or will any other among the numerous accomplished apian contributors to THE JOURNAL OF HORTICULTURE expound the riddle which I am about to submit to their consideration? Time will show, but I will at once state what has surprised me, and then as the journalists say, "pause for a reply."

The incident which has so much astonished and puzzled me is, this day (August 19th), finding two queens peaceably installed in one hive. The first was evidently the mother of the colony moving slowly over one comb with all the state and dignity proper to her matronly condition, and the second was standing on another comb (separated by two others from the one on which the mother of the hive was parading), and receiving apparently equal respect with the rightful sovereign from a circle of courtiers that surrounded and attentively regarded her.

The colony itself is a pure *Ligurian* which has been treated for, and apparently cured of, foul brood in the manner detailed in page 97—that is, the bees were driven into an empty hive in which they were kept four days, and then again driven into another hive with a few clean combs, in which they were suffered to remain unmolested. This process was completed about a month ago, and now the hive is half filled with combs in which is some honey and a great deal of brood in all stages. In fact, the colony is precisely in the condition of a recent swarm of moderate size, which has half filled its hive and has a fertile queen at its head.

The old queen is large and evidently very prolific, whilst her junior is also of full size; but judging from her contracted abdomen is probably still a virgin.

Now, what under these circumstances can have caused the bees to raise a second queen? and what can have induced the queen regnant to brook so near a rival to the throne? As I said before, "I pause for a reply."

I should state that I removed the supernumerary queen as soon as I discovered her, and placed her at the head of a queenless colony. It is, of course, very doubtful whether she will remain there, as, if she has already taken wing, she will probably soon find her way back to her old quarters. The event will, however, be watched with some interest by —A DEVONSHIRE BEE-KEEPER.

FOUL BROOD NOT AN ARTIFICIAL DISEASE.

LET me assure Mr. Lowe that he is entirely mistaken in considering foul brood to be identical with chilled brood. There is really quite as much difference between them as there is between smallpox and a common cold in the human subject; and chilled brood, when free from infected matter, appears as little likely to degenerate into foul brood, as a cold in the head to produce confluent smallpox in the absence of contagion. The simile of the unhatched eggs of a domestic fowl is also by no means correctly put. If thoroughly chilled all may die, and so may that portion of the brood of a hive which is uncovered and neglected by the bees. But here the mischief ends: the next sitting of eggs hatches out all right; and so also with bees—chilled brood is removed, and the cells again tenanted on the return of warm weather, or an increase in the population. I know little of the management of poultry, but I think I may safely assume, that if the eggs of at first a few hens, and ultimately those of every hen in the poultry-yard, were found perfectly incapable of hatching, although the mothers sat fairly, and every care was taken of them, the poultry-keeper would be right in attributing the circumstance to disease, and would be sadly mistaken if he persisted in ascribing his misfortune to the momentary absence of the hens, which had constantly occurred in former years, but had never before been attended with such disastrous effects.

Mr. Lowe says, "If foul brood be a disease, I should like to know by what it is caused." So should I. And a great many other people would like also to know the causes of the potato disease, pleuro-pneumonia in cattle, variola in sheep, strangles in horses, and distemper in dogs, but I never heard any one doubt the reality of these diseases because their occult causes remain obscure.

It is true that mine is, to a very great extent, an experimental apiary, and that when once the poison had been introduced by means of infected combs from common hives, I, in my ignorance, assisted its dissemination through all my colonies by the very endeavours which I made to palliate it; but Mr. Lowe is quite mistaken in stating that "it is only in the hands of the experimentalist that we find it generally manifested." I will give a case in point. Mr. Quinby, an American writer, and the cleverest and most sensible apiarian of the old school that I have ever met with, has lost as many as a hundred stocks in a single year from this pestilence, although he kept bees in the ordinary manner in simple boxes without bars or frames; whilst Mr. Langstroth, who claims to be the original inventor of frame-hives, and is probably by far the most scientific and experimental apiarian in America, declares that it has never made its appearance in his apiaries, and that he should regard its general dissemination in America as the greatest possible calamity to bee-keeping.

I can also state that the process of driving healthy bees one day, stowing the deserted hive in a warm kitchen during the night, and fitting the combs into frames the next morning,* is by no means deserving of the reprobation with which Mr. Lowe has visited it. Of course, when the hive is on the spot none of these delays should take place; but the actual mischief is very trifling, being confined to the loss of a few of the larger worms which protrude from their cells, and are speedily removed by the bees. Neither the eggs, very young brood, nor that which is sealed over, is at all injured, nor can foul brood be created in this manner, as I have proved repeatedly in former years. The fact is, if foul brood were identical with chilled brood, I should have met with it long ago, nor would my friends, Mr. Fox, "B. & W.," "J. E. B.," Mr. John P. Edwards, and hundreds of others, have entirely escaped it.

I do not expect to convince Mr. Lowe, nor am I by any means sure that a bystander would not deem me out-argued, since the firmness of Mr. Lowe's convictions is fully equalled by his ability in maintaining them; but in this case I have had ample opportunities of judging, and I may confidently ask the apiarian readers of THE JOURNAL OF HORTICULTURE, if I have ever misled them in a single instance which has fairly come under my observation as—A DEVONSHIRE BEE-KEEPER.

P.S.—Since writing the foregoing I have perused Mr. Edwards' excellent article in page 137, for which, as well as that in page 120, I beg to tender him my best thanks. He has, I perceive, anticipated some of my arguments in another form, and confirms much of my own experience in driving, artificial swarming, the effects of chloroform, &c.

THE FOUL BROOD CONTROVERSY.

APIARIANS have the character of being the most prejudiced class in the world; and surely we have had an instance of this characteristic lately, when we find Mr. Taylor, Mr. Lowe, and Col. Newman—men who have carefully studied the habits of bees—attacking "the experimental" apiary of Mr. Woodbury, and almost rejoicing over what they would call the failure of his "scientific" management; and by exaggerating or misinterpreting it, they seem to want to drive us back to nature, as they call the old-fashioned straw skeps and swarming system. I am afraid that we, who are anxious to learn from the experience and misfortunes so generally divulged by "A DEVONSHIRE BEE-KEEPER," cannot hope to benefit by a discussion of the question whether foul brood is a disease or not.

Mr. Lowe, who acknowledges that he passes over cursorily the experience of other writers on the diseases of bees, has found this disease, or complaint, or malady, or evil, or whatever he may choose to call it, in his own hives. But is he not taking for granted the cause of it—namely, a sudden chill to all the brood affected? It is quite as probable that this evil has a small beginning, and spreads rapidly throughout the hives, since experience teaches that a hive attacked by it rarely recovers, but that all the comb becomes affected.

Mr. Woodbury, by the great advantage his "experimental" system gives him over Mr. Lowe, has discovered that it is

contagious, and probably infectious too. Mr. Lowe compares the evil to the chilling of eggs which are being hatched. Has he found that one chilled egg will communicate its rottenness to other sound eggs? The origin of the disease foul brood is still a mystery to us English bee-keepers, like that of typhus, or cholera, or the potato disease (does Mr. Lowe deny the name of "disease" to the last?) and our object should be to collect as much information on the subject as possible, and not to check the efforts of our pioneers by a sneer at their failures.

Mr. Woodbury has communicated promptly his bad success that all might learn from him. The cause of it he was enabled to discover, because his system was a scientific one. How many old-fashioned apiaries have died out during the last three or four years, and the cause of their death left in obscurity because their owners would not be "fighting against nature?" And yet this fatal visitation is denied to be a disease, or, at least, called "an entirely artificial one," in face of the acknowledged ignorance which prevails in England on the subject, and in face, too, of the larger experience of bee-keepers in Germany and America. Our immunity must surely be the immunity of ignorance only.

Our progress in knowledge on this interesting branch of natural history will be lamentably slow if our writers on the subject persist in "passing over with a cursory glance" the information afforded by others, even though they be foreign bee-keepers, and perhaps ignoring them altogether.

One word more on those that oppose the scientific and experimental system. Are we to fall back on the cottager's usual reason for the dwindling of a hive—"There is something the matter with the queen," when Mr. Woodbury has been able, by scientific management, to discover and cope with a disease in his apiary, which may have been the unknown cause of the destruction of many apiaries on the old system? Mr. Edwards has referred to the artificial treatment of the cow and sheep as authority for the "rational management" of bees. I, too, would ask these "followers of nature" why we may not increase the breeding of our bees much in the same way as we increase the laying of our hens?

Mr. Woodbury's establishment is for the purpose of propagating the Ligurian breed, not for making honey: at least so I understand. His success is proved by the numbers of Ligurian colonies which he has spread over England.

I have heard of diseases running through the stock of horse-breeders; but I have not heard that their misfortune was attributed to their assisting nature by keeping their stock in stables and boxes, and on good food, instead of letting them run wild.

I must apologise for the length of my letter, but it is on a subject on which I, in common with so many other bee-keepers, feel strongly. We cannot hope for improvement in bee-keeping in England, if the efforts toward progress are so unceremoniously snubbed. And there is no English bee-keeper who ought not to feel, and be ready to express, his gratitude for the information which Mr. Woodbury has so freely placed within his reach?—W. C. ELLIS, *Bothal*.

I HAPPEN to possess a copy of a book translated some years ago from the original of Jonas de Gelien, entitled the "Bee Preserver," and which the author tells us is "the result of sixty-four years experience." From this high authority we have the following passage—"Bees have no real disease. Dysentery, about which so much noise has been made, never attacks the bees of a well-stocked hive that is left open at all seasons, but only those that are too long and too closely confined. All their pretended diseases are the result of hunger, cold, or the infection produced by a too close and long confinement during the winter." Nothing is here said about a so-called malady—"foul brood." Foul, indeed, is the state of things, when in early spring the stock has been so much weakened, no matter how, that the labourers are insufficient to bring out the grubs that have perished prematurely for want of the warmth necessary to mature them, only to be insured by adequate numbers. Is more required than thousands of rotting carcasses (sensitive as bees are to the least offence), to fill the hive with unnatural stench and ultimate disease? What would be the condition of a human family under analogous circumstances—viz., supposing a dead body in a house were to remain unburied

and unconfined week after week, till every room was charged with infectious effluvia? I suppose, like the bees, the inmates would be glad to beat a retreat. This appears to me a common-sense view of the matter, without racking the brain to find out more causes than are needed to produce the effect.—A SUBSCRIBER.

AFTER reading the very able articles by the "DEVONSHIRE BEE-KEEPER," and Mr. Lowe, on the important question of foul brood, which is so detrimental to all bee-keepers, I think that by putting the two letters together every one will come to the conclusion that foul brood is caused both by experimenting with the bees, and the late bad seasons. There is no doubt that if the comb with grub in it is left for one night without the bees it will perish, and the bees will not be able to hatch it out, just the same as with eggs, only some of which will hatch if left to cool. Thus if only part of the grub is hatched, and the other left in, being incapable of being hatched-out, it will become foul, and so prevent the hive from flourishing. In the bad seasons we have had, innumerable hives have been lost both in the spring and winter from starvation, and the young larvae being left in the cells unhatched become foul, and then fresh bees are put in the same hive where the foul brood is, with the idea that the bees, having a house ready furnished, will go on and prosper well; but it is the reverse, the bees being unable to clear the hive of the foul brood, and the queen having no place to deposit the eggs in, the consequence is, the bees dwindle away, and so the infection spreads through the apiary.—L. C.

I WAS glad to see the articles on bees in No. 125, and am sure all apiarists are much indebted to the "DEVONSHIRE BEE-KEEPER" for his numerous letters on these interesting insects, and bringing this foul-brood discussion forward. We shall now understand the cause of bees dwindling away, and, consequently, the remedy. From what "A LANARKSHIRE BEE-KEEPER" and Mr. Lowe say, any of your readers will know what foul brood is and its cause, and may, therefore, find a remedy.

I had a common straw hive which died out in the winter of 1861, and last autumn I put the bees out of a large hive into it, and at the same time mixed and transferred several others; but this spring and summer I observed that the bees seemed to decrease, and, therefore, supposed there was no queen, or, if there was, that she was not a prolific one. On the 9th of July I fumigated it and found very few bees, and also a queen. I destroyed her and joined a third swarm to the hive, but the bees would not let the queen stay in the hive, and she and a few of her own bees came off as a swarm and were hived. The next day they came off again and flew away and were lost.

The hive seemed to work better than before, and I thought this queen might have gone back; but seeing lately the bees growing less and less, I made sure there was no queen, and, therefore, thought it best to fumigate and join them to one of my Ligurians; but after looking nearly all the bees over discovered they had made a queen, and instead of returning her and the bees to the same hive, I took a hybrid queen from the observatory-hive and joined her and the bees to it. On examining the comb I found some of the cells full of a kind of white matter, a few worms, and some grub that appeared to have been long sealed over. I had, therefore, little doubt that this hive was affected with foul brood, and I burnt all the combs. There can be no doubt a hive full of comb after dying-out is not fit to put bees in again.—A. W.

RANDOM APIARIAN NOTES.

1. THE temptation is irresistible to ask "AN OLD-FASHIONED BEE-MASTER" to furnish us with statistics of his "inexpensive row of straw hives," which give him "neither trouble in management nor anxiety about the harvest in due season." Let him say how much *bona fide* honey he has obtained from his apiary during each of the last five years, particularising the number of hives plundered and how plundered, the amount of pure honeycomb or raw honey yielded by each hive. He would oblige by also stating the experience of cottagers and others in his neighbourhood during the same period.

Mr. Woodbury's apiary is not merely scientifically con-

ducted: it must be borne in mind that it is in great measure an experimental one. His object has not been to obtain honey, but to multiply and disperse abroad a new species of bee till recently unknown in England. If Mr. Woodbury would enter into details, I think he would astonish some old-fashioned bee-masters by his statement of the eminent success which has attended his labours. The misfortune under which he is now—let us hope only temporarily—suffering, is no more than such as may attend any old or new-fashioned system of management; with this difference, however—that whereas an old-fashioned apiary would probably have died out under such a visitation, our scientific friend, we may safely predict, will not fail to triumph over the enemy in the end.

As a scientific apiarian myself, I may say without egotism, I have been most successful, as witness my experience recorded in these pages during the last twelve years. Even in ordinarily bad seasons I seldom fail to get my fair quatum of honey; and I will challenge any apiarian situated like myself to a comparison of notes without much fear of the result, be he "AN OLD-FASHIONED BEE-MASTER," or one of the "scientific" race.

In this part of England I know of many old-fashioned apiaries that have utterly perished during the last three years, while I have heard of little or no honey being obtained from any of them. The only successful apiaries about here are precisely those, and those only, which are scientifically managed.

2. I must beg entirely to differ from Col. Newman in his estimate of the effects of artificial swarming upon the spirits of bees and their activity. My own experience goes to prove that a judicious use of the power we have to compel bees to swarm is most beneficial, and that many a sluggish hive would be, and has been, quickened to "unusual activity" by a resort to this expedient. The fact is that you cannot, do what you will, diminish the activity of bees, provided they have a fertile queen, a considerable population, fair weather, and a suitable dwelling—it is altogether "against nature." An hour after the greatest disturbance they will be as busily occupied as if nothing had happened.

3. Again, Col. Newman hits hard at the indispensable practice of "driving" bees. But I need not comment upon his remarks, as Mr. J. P. Edwards has fully entered into the subject, and well explained the *modus operandi*. Occasionally a failure will occur, but in nineteen out of twenty cases success always rewards the persevering and scientific bee-master. Driving is now an established *sine quâ non* in every scientifically conducted apiary, and has been so for a century and more. Of course it is sometimes a tedious operation, and it is rather warm work on a hot day; but it is certainly one of the prettiest and most interesting among the labours of the bee-keeper, and is often very simply and quickly done.—B. & W.

DESTROYING DRONES.

I HARDLY feel myself qualified to take part in the great debate which your pages maintain with so much spirit on the economy of bees; but I should like to be informed what reason can be rendered for the unqualified opinion given in page 100, to the effect that drones should on no account be killed.

I recollect that in Taylor's bee book, to which many of us look up as to a great authority, a remarkable instance of artificial drone-killing is recorded, and the practice is recommended to the bee-keeper's consideration.—J. EARLE.

[No one shall bow more willingly to an opinion of that Nestor of the apiary, Mr. Taylor, than ourselves; yet "a man's a man for a' that," and we follow the example of no less an authority than Galileo, who when compelled to recant, said aside, "But the earth goes round the sun for all that." However, we wished to hear what another authority would say, and sent your note to "A DEVONSHIRE BEE-KEEPER," who replied—"My idea is, that killing drones oneself is usually too troublesome, but if it can be readily done as soon as their office is accomplished, it would be decidedly advantageous to get rid of the whole of them." That is our opinion also, but we are also of opinion that the bees know when "Othello's occupation's gone," better than the bee-keeper.]

EXPERIMENTING ON BEES.

WE who commiserate the condition of the "DEVONSHIRE BEE-KEEPER," with reference to the losses in his apiary, ought to be careful not to imitate the comforters of Job, who attributed all the miseries and misfortunes of the Patriarch to his own fault.

Those who try experiments with bees will often, doubtless, experience lamentable failures; but it is scarcely fair to attribute the complete and sudden break-down of our master in bee-craft to general mismanagement on his part.

I know that I have heretofore whilst experimentalising had many losses of valuable stocks, but I have at the same time, or during the same period, lost many a hive for whose decease I could attribute no satisfactory cause.

One good will arise to bee-masters from this loss to our respected friend, in that their eyes will now be opened to a fact to which many of them were formerly blind. I alluded in my last (page 100) to a hive which I thought would do no more good, and which I doomed to the "fuming-pot." This hive I have since taken, and I found "foul brood" therein and no mistake. Had I not read the account of such a disease in the letter of the "DEVONSHIRE BEE-KEEPER," I should certainly have given some of the honey, and, perhaps, comb, to others of my hives, and my loss next year might have been as great as his; as it is, I thank him for the opening of my eyes, and wherever I suspect the disease to lurk for the future, there fire and brimstone shall do their purifying work at once. I had observed throughout the summer that the hive in question gave forth a most unsavoury odour, and for the future this will be a hint not to be disregarded, and the suspected hive shall always be removed out of the way of infecting others.

With reference to the fuming of bees with fungus, may I add that I have tried it for years at all seasons of the year, strong doses and slight, and that I never could perceive that it injured those operated upon? A few at times have been killed, particularly when two or more swarms have been joined, or when large portions of the comb containing brood and honey have been removed from the stock; but this loss I have of late attributed, not to the effects of the fumigation, but to weapons of certain of the bees themselves, which certainly kill off their brothers whenever they wish for their removal, or think there is no more work for them to do. If I take off a super or middle-box, I do not now, as formerly, return the inmates, for if I do I invariably find slaughter to succeed. If, however, I "cruelly" slay them myself, I cannot discover that the remaining bees give any symptoms of a knowledge of the loss of the good of which they have been deprived.

I should be obliged by the Devonshire or Lanarkshire Bee-keeper giving me a reason for the supposed longevity of a queen bee. I am led to suppose that she does not see two winters, or, if she does, that the hive in which she is regnant will not be prosperous, and will shortly be destitute of subjects.—THE HAMPSHIRE BEE-KEEPER.

AN APPEAL ON BEHALF OF THE INFERIOR ANIMALS.

WE have received the following from an esteemed correspondent, and have great pleasure in giving it every publicity:—"It is a common observation that cases of brutality to horses, asses, and other large quadrupeds, are much less frequently witnessed now than they were some time ago. This is no doubt owing to the general increase of humanity, and to these animals being now under the protection of the law.

"An English gentleman would not himself give a moment's unnecessary pain to any living creature, and would instinctively exert himself to put an end to any suffering before his eyes: yet it is a fact that every game-preserver in this country sanctions a system which consigns thousands of animals to acute agony, probably of eight or ten hours duration, before it is ended by death. I allude to the setting of steel traps for catching vermin.

"The iron teeth shut together with so strong a spring that a pencil which I inserted was cracked and deeply indented in the violence of the blow. The grip must be close enough

not to allow of the escape of a small animal, such as a stoat or a magpie; and therefore when a cat or a rabbit is caught, the limb is cut to the bone and crushed. A humane game-keeper said to me, "I know what they must feel, as I have had my finger caught." The smaller animals are often no fortunate as to be killed at once. If we attempt to realise the sufferings of a cat or other animal when caught, we must fancy what it would be to have a limb crushed during a whole long night between the iron teeth of a trap, and with the agony increased by constant attempts to escape. Few men could endure to watch for five minutes an animal struggling in a trap with a crushed and torn limb, yet on all the well-preserved estates throughout the kingdom, animals thus linger every night; and where gamekeepers are not humane, or have grown callous to the suffering constantly passing under their eyes, they have been known by an eye-witness to leave the traps unvisited for twenty-four or even thirty-six hours. Such neglect as this is, no doubt, rare; but traps are often forgotten, and there are few gamekeepers who will leave their beds on a cold winter's morning one hour earlier to put an end to the pain of an animal which is safely in their power.

"I subjoin the account of the appearance of a rabbit caught in a trap given by a gentleman who, last summer, witnessed the painful sight many times:—"I know of no sight more sorrowful than that of these unoffending animals as they are seen in the torture-grip of these traps. They sit drawn up into a little heap as if collecting all their force of endurance to support the agony; some sit in a half-torpid state induced by intense suffering. Most young ones are found dead after some hours of it, but others as you approach start up, struggle violently to escape, and shriek pitifully from terror and the pangs occasioned by their struggles." We naturally feel more compassion for a timid and harmless animal, such as a rabbit, than for vermin, but the actual agony must be the same in all cases. It is scarcely possible to exaggerate the suffering thus endured from fear, from acute pain, maddened by thirst, and by vain attempts to escape.

"Bull-baiting and cock-fighting have rightly been put down by law. I hope it may never be said that the members of the British Parliament will not make laws to protect animals if such laws should in any way interfere with their own sports.

"Some who reflect upon this subject for the first time will wonder how such cruelty can have been permitted to continue in these days of civilisation; and no doubt, if men of education saw with their own eyes what takes place under their sanction, the system would have been put an end to long ago.

"We shall be told that setting steel traps is the only way to preserve game; but we cannot believe that Englishmen, when their attention is once drawn to the case, will let even this motive weigh against so fearful an amount of cruelty."

OUR LETTER BOX.

POULTRY BOOK (T. D. S.).—Perhaps "Dixon's Ornamental and Domestic Poultry," will answer your requirements.

LOSS OF PLUMAGE (H. C.).—Shabby plumage and comparative nakedness are natural to fowls at this time of year. The feathers are worn out. The smart winter clothing of last October and November has become seedy. Nature being busy preparing the new suit has nothing to spare for the old. It is become shabby and brittle. As they are in a confined space, separate the cock from the hens. Feed well, but on cooling food, and if you will have patience you will find the plumage of your birds renewed to your satisfaction.

COCHIN-CHINA CHICKENS (A Young Beginner).—What sort of place do your chickens roost in? If it is at all damp that will account for their being weak on their legs. The mere fact of chickens having to get up four steps into the garden in which they are allowed to run could never affect them in this way. The Devizes Poultry Show was held on the 10th and 11th of February last. We do not know if the time is settled when the next is to take place. The Secretaries are Mr. Long and Mr. Mullings.

PRESERVING EGGS (A Constant Subscriber).—We have known eggs keep good from May to Christmas by dipping them in melted fat and storing them in a dry cold place.

RABBITS (Idem).—Your Rabbits have what is called ear-gum, and it is caused by being kept in a damp and close place where there is not a free circulation of air. As soon as you discover it procure from a chemist a little lead oil ment, with which dress the inside of the ear as low down as you can reach with a feather. Examine them every day and clean off with a piece of blunt stick all scab and secretion as it becomes loosened, and by careful attention you will soon overcome the disease.

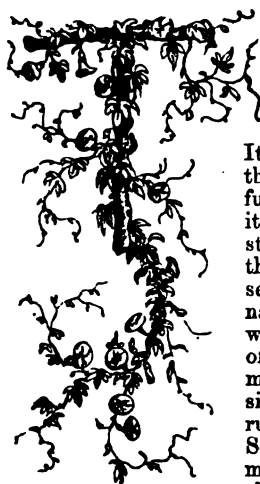
UNICOMB-NIVES (An Isle of Axholme Bee-keeper).—The distance between the two glass surfaces in my uncomb-hive is an inch and two-thirds, as recommended by Dr. Eyan.—A DEVONSHIRE BEE-KEEPER.

WEEKLY CALENDAR.

Day of Month Week.	Day	SEPTEMBER 1-7, 1865.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
1	Tu	Partridge shooting begins.	Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	18	m. s.	244
2	W	Chamomile flowers.	70.5	47.3	58.9	18	13 af 5	46 af 6	59 a 7	50 a 9	19	0 af 2	245
3	Th	St. Barnaby's Thistle flowers.	70.6	47.6	59.1	14	15 5	44 6	30 8	3 11	19	0 21	245
4	F	Field Marigold flowers.	70.4	47.9	59.2	14	17 5	42 6	5 9	12 0	20	0 40	246
5	S	Angelica flowers.	70.3	46.8	58.6	15	18 5	40 6	47 9	13 1	21	0 59	247
6	Sun	14 SUNDAY AFTER TRINITY.	70.0	47.6	58.8	15	20 5	38 6	37 10	8 2	(	1 19	248
7	M	A. Henfrey died, 1859. - Bot.	70.0	45.8	57.9	16	21 5	36 6	32 11	55 2	23	1 39	249
			69.5	47.5	58.5	17	23 5	33 6	morn.	34 3	24	1 59	250

From observations taken near London during the last thirty-six years, the average day temperature of the week is 70.2°, and its night temperature 47.2°. The greatest heat was 85°, on the 1st, 1843; and the lowest cold, 28°, on the 7th, 1855. The greatest fall of rain was 1.50 inch.

CAN THE PERIOD OF FULL BLOOM BE LENGTHENED IN OUR FLOWER GARDENS?



THE transitory nature of the display produced by the present style of flower-gardening is not unfrequently one of the most powerful arguments which are urged against it.

It is not proposed in the remarks that shall here be offered to refute the charge: on the contrary, it is frankly admitted that the stirring appeal to our sense of that which is beautiful, as presented by the pleasing combinations of the gay host of flowers which form so conspicuous a part of our flower gardens, is even much shorter than is to be desired. A frosty morning or a ruthless blast towards the end of September disturbs our equanimity to no small extent; and the chances of such occurrences are

often discussed with a foreboding bordering on the melancholy. And who is there that cannot sympathise with the spirit that heaves a sigh of regret at the prospect of so much grace and beauty becoming a decaying putrifying mass in less than twenty-four hours? We did by chance meet a few days ago with a heart so benumbed to the influence of flowers, that it was frankly avowed that flowers of any kind or to any extent had no charm for him. We earnestly pitied so singular a subject.

More particularly is the shortness of the effect produced to be regretted on account of the months of forethought and hard labour which its production calls into play and necessitates. One could almost wish that a writer in "Once A Week," who has imbibed very sentimental ideas about the ease, and interminable and undisturbed pleasures and abundant remuneration, that are attached to a head gardener's situation, could be placed in the shoes of many a gardener who has one of our large flower gardens to manage now-a-days. Leaving all other departments out of the question, he would find out before very long that in this one department alone there is enough to make a head gardener's office not one of "unalloyed pleasure," and that there is something more both behind the scenes and on the boards too than "going about giving orders," and that, worst of all, it is not remunerated with splendid sums ranging from £200 to £1000 a-year with other et-ceteras. He would also, perhaps, make the important discovery that to spend so much of his time in artificially heated and confined air, and to place a soil gorged with decaying vegetable matter, and surrounded with high walls and woods, was not the "most healthy" position in the world either. When a man writes about a thing that he does not know about, such, generally, are his lucubrations.

No. 127.—VOL. V., NEW SERIES.

It is, however, admitted on all hands, that such a display as is now produced in our flower gardens has never been equalled by any system of arrangement that has preceded the present. The materials are more brilliant, and the principle of arrangement more imposing, than anything that has previously existed; and the objections are raised, not against the beauty and effect produced, but on account of the evanescent character of the bloom. What is wanted is either to be able to prolong the season of blooming in autumn or secure it earlier in summer. Our climate renders the former impossible unless by a covering of glass. The latter, then, is what our hopes must rest upon in a popular point of view. If this be the case, it becomes a matter of no small importance to inquire whether it be possible, by any principle of management and arrangement, to have our flower-beds gay with flowers early in June that shall also last till frost puts an end to it in autumn. It is considered that this is attainable, and that, too, without adding much if anything to the labour or expense at present incurred in this department of our gardens. In most establishments the means and the end are sadly out of proportion in the flower garden as compared with other departments. If a gardener is expected to have crops of fruit he invariably expects to be supplied with proper means; but he does not hesitate to undertake the rearing of thousands of plants for the flower garden by any makeshift his brains can devise, and at planting-out time the plants are more an apology for plants than anything else. That by different management flower-garden plants could be made to produce the desired display of flowers at least a month earlier is a point on which I have no doubt whatever.

Let us take, for instance, the Geranium brigade of the great army of flower-garden plants, and see the great difference as to earliness of blooming that can be secured by different management to that makeshift system which is forced upon gardeners in so many instances at present. In some instances they have forced it upon themselves by an ardent desire to cope with more favoured neighbours, and from a mere love of the effect produced even for a short time. How often are Geraniums potted-off in spring when vineries and peach-houses are started, and from the high temperature of 70° and the shade of the Vines, are of necessity removed to sheltered shady corners under mats, wooden shutters, and even to trenches cut in the open quarters of the kitchen garden. Here they are hardened-off with a vengeance, and with an amount of anxiety and labour which the writer in "Once A Week" never dreamed of. All these methods I have myself adopted, and have besides shaken the plants out of cutting-pots and boxes, and planted them in the beds to be exposed to the drying breezes and hot suns of early summer, by which the green sappy leaves are turned brown in a day, and for the first month they get "small by degrees and beautifully less." As to bloom-buds or blooms there are none at planting time worth the name, and what few there may be (more by chance than good gardening), are soon done for; the tender foot-stalks are blackened and share the same fate as the foliage

No. 779.—VOL. XXX., OLD SERIES.

To produce early bloom and rapid growth, it is not so much a large as a properly prepared plant that is required. If both can be had of course so much the better, but the preparation is of most importance.

If instead of this mode of treatment the plants are potted into three and four-inch pots in February, and subjected to just sufficient heat to start them, and then placed in houses or pits under clear sheet glass, and exposed on all favourable occasions to a free circulation of air and all the sunshine that can be had in a south exposure, how different is the result! We have short, stubby plants clothed with thick hardy foliage, and bristling with bloom, that make comparatively gay beds the day they are planted. This is no mere theory, but a fact, which, no doubt, can be strikingly illustrated by many cases. One particular instance of the great difference produced on the side of rapid growth and early flowering came within my own experience this season, in the case of a border wherein some seven hundred plants of variegated *Geranium Bijou* form part of the combination. It was desired that two of the lines should be planted with the largest plants of this *Geranium* that could be selected, and they were found in a house with an east exposure where they only had the sun for a short period of the day. In other respects they were here treated exactly the same as another lot of the same plant, which had a place in another house with an aspect due south, which, consequently, had all the sunshine that it was possible to enjoy. The plants from the east aspect were fine handsome plants, larger in all respects than those in the other house, and they had always been so, and were accordingly planted in the two back rows. The short, stiff, rustling plants from the influence of the full sun filled up the rest of the bed. Most of them were much less than the other set; but the result has been, that the small plants out-distanced the others in a very short time, and closed up, and were in full flower a month before the others.

Now, the big plants were by no means tender when planted, and they lost no leaves, and apparently received no check, but they made neither wood nor flowers half so quickly in the early part of the season as the others. Besides this, I might notice as corroborative of the above, the case of a large number—between eight and nine thousand—of the different varieties of the *Zonale* and plain-leaved *Geraniums*, which were potted-off in February, and placed in one large house, where they had no fire heat whatever. They stood not far from the glass, and were constantly exposed to all the sun and air which an efficiently ventilated and clear sheet-glass house could afford. When planting time came they were compact, sturdy plants, bristling with expanded and unexpanded blooms, and made gay beds the day they were planted. And I speak within the bounds of truth when it is stated that they were in their prime at least three weeks earlier than ever I could have them when put into vineries, and afterwards hardened-off on the makeshift system in sheltered corners under mats, shutters, &c. The labour and anxiety incurred were also wonderfully decreased, as compared with any temporary means which ever I could hit upon. There can be no doubt whatever, that in the case of one of our most prominent sections of plants, and in others, too, the blooming season is much longer when they are grown as related above.

It is also considered a point of considerable importance, as a means to this end, to select in autumn good, large, stiff cuttings instead of the mere points of the shoots, and to strike them early. Before the middle of September the last cutting should be put in. Besides this, there is a great difference in favour of the cutting that is struck out-doors in the full blaze of the sun, as compared to a later cutting under glass.

In the case of *Verbenas* again, several weeks could be gained by making a selection of the varieties found to flower the earliest. In this respect there is a difference of several weeks in favour of some of the varieties. Generally speaking, the stiff compact-growing sorts, such as *Charlwoodii* among the darks, and *Victoria Scott* among the scarlets and crimsons, are much earlier bloomers than the strongrambling sorts. White beds could be much earlier in fine condition by using the *Cerastiums* in place of white *Verbenas*, which are generally late, and when in bloom cannot be compared to *Cerastiums* for a bed of

white. In autumn, too, the white *Verbenas* give way, while the white-foliaged plants are in their glory. There are several varieties of *Arabis* (particularly *A. lucida variegata*), which are really beautiful for edgings; and in consequence of their standing the winter, and being fine when many other things are only being planted, are deserving of more extensive cultivation.

I have no doubt that in the course of years, and by judiciously agitating the subject, that the season of the flower garden will be greatly lengthened, independently entirely of the things now used in many places for spring decoration. And, oh! that we could hope for the time when in our giant establishments we shall see an acre or two covered with glass, if it were for nothing else than to bring out the real splendours of the fine varieties of *Geraniums* which we now possess. Very little conception can be formed of the effects which could be produced under glass with the great *Nosegay* and *Globe* varieties of *Geraniums*. A glass-covered garden for these alone would be an era in pleasure-gardening that would astonish us, if any judgment is to be formed from the effect which they produce in a small way long weeks after they are cut down with frost out-doors. In this direction an extension of the blooming season on a large scale can scarcely be looked for; and it is, therefore, all the more desirable that early blooming in the system now so much adopted should be aimed at, as well as the selection of those varieties which have their full effect early in the season, and which at the same time maintain it to the last. More particularly is this to be desired when such plants have invidiously been made the chief or only features of the parterre. The sooner the masses of our tender flowers which vanish with the first frost cease to be the alpha and omega of our flower gardens, the better in many respects; and if anything is wanted more than another, it is the genius which will so blend and intermingle them with beautiful varieties of evergreen trees and shrubs that they will prove important features in summer and autumn, and yet not be much missed when not there in winter. There is always a foreboding of dreariness which comes over the mind when looking at a mass of flower-beds in a sunk panel, or on a terrace, where there is nothing left when they are gone but bare beds of earth, or even broken bricks or bottles. They should be so placed and blended with something of a more permanent character, that their removal would be no more missed than the bracelets and jewels which ornament the naturally elegant and beautiful person when they are laid aside.

D. THOMSON.

THE AGRICULTURAL HALL FLOWER AND FRUIT SHOW.

THE Agricultural Hall, Islington, though only completed last year, is familiar to the public as the place where the Smithfield Club Cattle Show is held. There are few persons interested in rural affairs who do not make a point of being present at least once in two or three years at these great annual gatherings, where the townsman and the countryman meet each other to the amusement, instruction, and profit of both.

The Show had outgrown the old inconvenient building at Baker Street, and, to meet its requirements, a new structure was erected in the Liverpool Road, enclosing a space of 384 feet by 217 feet, and surrounded by galleries 36 feet wide, affording in all an area for exhibition purposes of nearly 3 acres. The roof has a span of 125 feet, and a height of 75 feet, and being of glass affords an abundance of light. It will thus be seen that the building is well adapted for a horticultural exhibition on a grand scale; and as this was a want in that wide and populous district, the north of London, it was determined to hold one. This determination, however, was arrived at too late in the season; the last of the summer shows was over, and exhibitors, expecting nothing more, took their measures accordingly. Had a list of the prizes offered been issued in sufficient time, doubtless a greater competition would have resulted; added to which the Exhibition was singularly unfortunate in the weather, for the flowers of many of the intending exhibitors were irretrievably damaged by the thunderstorm which visited the southern part of England on the Tuesday preceding. There were also some faults in the schedule of prizes offered, which undoubtedly

tended to keep away exhibitors. There was also the still greater drawback that the Show was a new one, that it was not sufficiently known; and what probably acted still more to its disadvantage, it was to last three days—a period too long for gardeners to expose their most valuable plants to the unfavourable influences of a public exhibition. It was, then, probably, to all those causes combined, as well as to the size of the building itself, that the tables were somewhat scantily furnished, and that chiefly with fine-foliaged plants and florists' flowers, of which last, it need hardly be observed, an immense number will fill a small space. However, the Exhibition was but a first attempt, and any want of success in a horticultural point of view was amply compensated by the poultry department, of which a separate report will be given in another column. The weather, too, on the first day was very unfavourable, close heavy rain continuing to fall with but brief intermission throughout the time the Show was open, and this, doubtless, was the cause of a scanty attendance of visitors.

STOVE AND GREENHOUSE PLANTS.—The show of these was very inconsiderable, only three competitors coming forward—namely, Mr. Rhodes, of Sydenham Park; Messrs. A. Henderson & Co.; and Mr. Young, gardener to R. Barclay, Esq., Highgate, who stood in the prize list in the order in which they are here named. Mr. Rhodes had *Vinca alba*, *Allamanda cathartica*, *Crowea saligna*, and three *Heaths*. *Vinca ocellata* in good bloom, *Allamanda cathartica*, a large pot of *Lilium lancifolium rubrum*, *Ixora coccinea*, *Brugmansia candida*, *Bilbergia splendens*, *Hedychium Gardenianum*, and *Pancratium maritimum* were among the other plants shown.

FINE-FOLIAGED PLANTS.—These together with exotic Ferns constituted the principal portion of the plant exhibition, and among them were some excellent specimens. Mr. Williams, of Holloway, took two first prizes. Among the plants which he exhibited were a large *Calocasia Lowii*, *Dicksonia antarctica*, *Gleichenia spelunca*, *Livingstonia borbonica*, and *Dion edule*; and in another collection *Cibotium princeps*, the glaucous-leaved *Encephalartos Lehmanni*, and *Dracena indivisa* were noticeable. Messrs. A. Henderson & Co., were second both in twenties and twelves, having among others a fresh healthy-looking plant of *Cycas revoluta*, a large *Dracena ferrea*, *Dracena cannaefolia*, and *Alocasia metallica*. Mr. Young, of Highgate, who was third, had *Sansevieria javanica*, and three good *Caladiums*. Other collections from the same exhibitor contained some large specimen *Caladiums*, *Pandanus elegantissimus*, and *Sphaerostemma marmoratum*. Large plants of *Encephalartos caffer* and *latifrons*, and *Cycas revoluta*, also came from Mr. Taylor, of Highgate, who had third prize for twenty plants.

MIXED COLLECTIONS were shown by Mr. Williams and Messrs. Henderson. That of the former contained two very large specimens of *Dicksonia antarctica*, *Agave filifera*, *Anthurium acule*, a good flowering plant of *Allamanda Schottii*, and *Achimenes Mauve Queen*; and Messrs. Henderson had a small plant of *Alocasia metallica*, the young leaves of which shone with a beautiful metallic lustre; a good specimen of *Cibotium Schiedeii*, *Cissus porphyrophyllus*, a fine specimen of *Jacarandra filicifolia* which had been exhibited several times during the summer, an *Allamanda*, some *Ixoras*, and *Vincas*.

EXOTIC FERNS.—The best came from Mr. Williams, who had magnificent examples of *Cibotium Schiedeii* and *princeps*, *Gleichenias dichotoma*, *flabellata*, *spelunca*, and *semivestita*, the latter forming a beautiful mass; also, good plants of *Alsophila radens* and *Todea africana*. An excellent collection also came from Mr. Taylor, Mr. Young, and Messrs. Henderson, the first two taking the second and third prizes.

DAHLIAS were shown in splendid condition; those from Mr. Turner, which took the first prize in the Nurseryman's Class of 48, could not have been surpassed for size, form, and effective arrangement. There was not an indifferent flower among them. They consisted of *Midnight*, *General Jackson*, *Mauve Queen* (very fine), *Flower of the Day*, *Lord Derby* (rosy crimson), *Hugh Miller*, *Chieftain*, *Lord Elcho*, *Imperial*, *Caractacus* (yellow tipped with bright red), *Pauline*, *Lord Palmerston*, a lilac-mauve-tipped seedling, *Chairman* (yellowish-buff), *Mrs. Busk*, *Cygnets*, *Triomphe de Peck*, *Mr. Boshell*, *Charlotte Dorling* (white tipped with rosy crimson, very fine), *Andrew Dodds*, *Leopard*, *Dinorah*,

Lilac Queen, *Umpire*, *Beauty of Hilpertion*, *Disraeli*, *Model*, *Pioneer*, *Mrs. Henshaw*, *Una*, *Mrs. Elliott*, *Sidney Herbert*, *Golden Drop*, *Garibaldi*, *Norfolk Hero*, *Bob Ridley* (bright red), *Lady Popham*, *Commander*, *Perfection*, *Marion*, *Mrs. Vyse*, *Countess of Shelburne*, *Charles Waters*, *Earl of Shaftesbury*, *Lord Clyde*, *Mrs. Piggott*, and *Criterion*, the last a magnificent bloom $4\frac{1}{2}$ inches across. Mr. Keynes, of Salisbury, was second in the same class with excellent blooms, but not equal in size to Mr. Turner's. Among the best were *Lady Douglas Pennant*, *Andrew Dodds*, *John Wyatt*, *Charlotte Dorling*, *Earl of Shaftesbury*, *Lord Russell*, and *Earl of Pembroke*. Mr. Cattell, of Westerham, was third with some excellent blooms, and Mr. Legge, of Edmonton, had an extra prize.

In the Class for 24 blooms Mr. Keynes was first, and Mr. Turner second, the difference between the two collections being almost inappreciable. *Baron Taunton*, *Lord Derby*, *Beauty of Hilpertion*, *John Wyatt*, *Lilac Queen*, *Charles Turner*, *Hugh Miller*, *Willie Austin*, and *Lord Russell*, were a few of the finest; and in Mr. Turner's stand, *Mauve Queen*, *Criterion*, *Bob Ridley*, and *Charlotte Dorling*, were very fine. Mr. Cattell was third, and Mr. Legge had an extra prize.

In the Amateurs' Class the best twelve came from Mr. Moffat, gardener to Viscount Maynard, Dunmow. They were *Model*, *Joy*, *Lord Palmerston*, *Andrew Dodds*, *Umpire*, *Peri*, *Colonel Wyndham*, *Village Gem*, *Chairman*, *Lady Popham*, *Lilac Queen*, and *Mrs. Charles Waters*, all of which were fine. Mr. Wakeman was second; Mr. Perry, *Castle Bromwich*, third.

In Fancies Mr. Turner was first in the Nurserymen's Class. *Pauline*, *Nora Creina*, *Pluto*, *Zebra*, *Queen Mab*, and *Starlight* were some of the most striking; and Mr. Keynes was second. In the Amateurs' Class Mr. Perry was first; Mr. Barnard, gardener to Col. Eyre, second.

Several new kinds were shown by Mr. Keynes, as *Regularity*, *Earl of Pembroke*, *Surety*, and *Anna Keynes*, all of which have received certificates from the Floral Committee. *Sam Bartlett*, *Queen of Roses*, and *Willie Austin* also appeared very desirable sorts. Dr. Johnson, a large light scarlet, came from Mr. Harris.

HOLLYHOCKS.—From the greatly improved character of the newer varieties, both as regards colour and substance, this flower cannot fail to take a much higher position at our autumn shows than it has hitherto done; and it may safely be affirmed that it is steadily advancing in favour; and how worthy it is of more extended cultivation all who have seen the splendid blooms exhibited by Messrs. Downie, Paul, and Chater must readily acknowledge. On the present occasion Messrs. Downie had the first prize for *Pre-eminent*, crimson lake; *Golden Fleece*, yellow; *Aurora*; *Mrs. Chater*, rosy carmine; *Joshua Clarke*, bright cherry; *Countess of Craven*; *Porter's Lord Clifden*; *The Queen*; *Mrs. F. Mackenzie*, scarlet; *Mrs. Balfour*, crimson shaded with salmon; *Mrs. B. Cockrane*, rosy crimson; and *Invincible*, rosy salmon. Mr. W. Chater's had also splendid blooms, some of them being even larger than Messrs. Downie's, but they did not exhibit so great a variety in colour. Among them, in addition to some already named, were included *Princes*, *Beauty of Milford*, *Acme*, *Ariadne*, *Rosea Pallida*, *Queen Victoria*, *Argus*, and *Paragon*. Messrs. Paul & Son, who had the third prize, and Mr. Smail of Norwood, who received an extra prize, had also remarkably fine blooms.

ASTERS.—In the Quilled kinds a stand of very fine blooms from Mr. C. Sandford, gardener to T. Thomasset, Esq., took first prize; the second and third going to Mr. Grimby, Stoke Newington, and Mr. Ward, Tottenham. In Tasselled kinds Mr. C. Sandford was also first, all his blooms being large and exceedingly good—some measuring $3\frac{1}{2}$ inches across. Mr. W. Sandford, Woodford Bridge, and Mr. Ward, were second and third, both their exhibitions being likewise excellent. Messrs. Cutbush contributed in addition some well-grown plants, about 18 inches high, in pots.

GLADIOLUS.—A box containing good blooms of *Brenchleyensis*, *Madame E. Verdier* (very fine), *Goliath*, *Fanny Rouget*, and *Osiris*, came from Mr. Cattell and received a first prize.

PHLOXES.—Mr. Turner was first for these, showing some immense trusses, and the flowers being individually large. *Orphée*, *Oriana*, *Mrs. Standish*, *Comte de Chambord*, *Julie*

Roussel, and Madame Vilmorin, were some of the finest. Mr. Cattell was awarded the second prize.

MISCELLANEOUS.—Messrs. Perkins & Sons, of Coventry, and Mr. Perry, had some excellent trusses of Verbenas, for which both received prizes; and Messrs. Paul & Son eight fine boxes of Roses, some of which, as *Senateur Vaisse*, *Comtesse de Chabillant*, *Catherine Guillot*, *Général Jacqueminot*, and *Madame C. Crapelet* were very fine.

Prizes were offered for table decorations, and the highest award was taken by Mrs. Cutbush, of Highgate, with March's stands elegantly filled with flowers and fruit. The two outside stands had Peaches, Nectarines, Apples, and Pears at the base, resting on fronds of *Lastrea Filix-mas*, and interspersed with the lively green of *Adiantum cuneatum*. *Lycopodium caesium* was twined gracefully round the upright glass stem, and the top dish had Fuchsias and Capsicums depending from the edge; whilst the central portion of the dish itself was filled with white Roses, scarlet Verbenas, white Jasmine, and Heliotrope, with some *Adiantums* interspersed. The centre stand had flowers at the base and fruit at the top; the former consisting of Scarlet Geraniums, Heliotropes, Verbenas, and *Lisianthus*; the latter of Black and White Grapes, Apples and Plums, surmounted by a Pine, whilst *Lycopodium* twined up the column. The design balanced well from all points of a view, and did credit to the taste of the lady by whom it was executed; and she further contributed some bouquets, one which, consisting wholly of white flowers and *Adiantum*, was extremely modest and graceful. Mr. Robson, of Linton Park, also exhibited a design for table decoration, for which he received the second prize. This was also in glass stands: the central one, instead of having an upright column, had a stem which branched at a little distance from the base into two semicircular arms, which reunited beneath the dish at top; and within the circle thus formed the base portion of the stem was continued upwards a short distance to support another small dish. In this a white *Magnolia* was placed, a Pine Apple at top, and Rose-buds, Japan Lilies, golden variegated Geranium leaves and Ferns at the base; whilst the two end stands, on the contrary, had fruit at the base and flowers at top.

FRUIT.

Prizes being offered for out-door fruit only, the "king of fruits," Melons, and the splendid examples of Black Hamburgh and other Grapes, which we look for at a horticultural exhibition, were excluded, and their absence spoilt the effect of the display, more especially as it was too early in the season to expect much in the way of out-door fruit.

Mr. Morris, gardener to A. Bosanquet, Esq., Southgate, had the first prize for a collection of Apples, Peaches, Washington, Victoria, and Green Gage Plums. Messrs. Cutbush and Son, second, for Kerry Pippin, Jargonelle Pears, Peaches, Nectarines, Green Gage Plums, and Sweetwater Grapes. Mr. Turner also received a prize for a collection consisting of Peaches, Apricots, Plums, a Melon, White and Black Grapes, and a Pine.

PEACHES.—Mr. Turner had Walburton Admirable, Belle-garde, Noblesse, and Padley's Royal, for which he received a first prize; and he had a similar award for a dish of Walburton Admirable.

NECTARINES.—Mr. Rutland, Garnstone Castle, was first in four dishes, with Elruge, Roman, Duc du Telliers, and Brugnion. Mr. Turner was second; and in the Class for single dishes he had first prize for some fine fruit of the Pitmaston Orange very highly coloured. Newington from Mr. Heppar, Dulwich, had equal first.

FIGS.—In three dishes Mr. Turner had first prize for good dishes of Brown Turkey, Brunswick, and White Genoa; and Mr. Moffat was first in single dishes with Brown Turkey.

CHERRIES.—Excellent Morellos were shown by Messrs. Turner, Lane, and Earley, to all of whom prizes were awarded.

PLUMS.—In four dishes, Messrs. Lane were first with *Magnum Bonum*, Washington, Goliath, and Green Gage. Mr. Turner second, with Washington and Jefferson (fine), Victoria, and Goliath. In single dishes Mr. Turner was first with Green Gage; Mr. Beasley, Twyford Abbey, second, with the same kind; Mr. Newton, gardener to G. J. Graham, Esq., Enfield Chase; third.

APPLES.—In Messrs. Lane's kind Mr. Turner was first with *reynolds* Cox, *James* Pippin, and *Small's* Golden Pippin.

Mr. Moffat second, with Cox's Orange Pippin, Kerry Pippin, and Golden Russet. Some good dishes were also exhibited by Mr. Newton and Mr. Earley. In kitchen kinds, Mr. Wright, Twickenham, had first prize for Golden Noble, Hollandbury, and Hawthornden (fine). Mr. Lane, St. Mary's Cray, was second.

PEARS.—Mr. Turner was first with Williams' Bon Chrétien, Jargonelle, and Fondante d'Automne. Messrs. Lane second, with *Beurré d'Amanlis*, Charnock, and Jargonelle. Mr. Earley was third; and Mr. Newton had also good dishes of Windsor and Marie Louise.

MISCELLANEOUS.—Messrs. Lane had numerous fruit trees in pots loaded with fruit, and consisting of Figs, Plums, Cherries, Apples, and Pears. They also exhibited dishes of Apples, excellent White and Red Grape Currants, and Plums, of which the Washington was very fine. Mr. Turner had a beautifully-netted Golden Perfection Melon.

We cannot conclude without paying a just tribute to the uniform courtesy which Mr. Douglas brought to the task of carrying out the arrangements of the Show—a task all the more onerous that the Show was a new one, and that, therefore, there was not the experience of previous years to guide the judgment. The experiment of holding a horticultural show for North London could not be considered a success as regarded the number of visitors it attracted; but if repeated at another period of the year, and when its existence shall be better known, it will, probably, be attended with greater success.

LOBELIA KERMESINA AS A BEDDING PLANT.

THIS charming bedding plant has hardly received the attention it deserves. We have few bedding plants of the same colour, and none that are less spoiled by rain.

It is propagated with even more facility than *L. speciosa*, but is more delicate than this latter. Plants of both were pricked out early in April in a sunk bed, and covered with boards at night, and *L. kermesina* suffered much more than did the other from exposure, &c.

The cuttings should be put in as early as possible, as it is rather late in coming into bloom, and in planting out it will be found advantageous to stick little twiggy branches about 3 inches high all over the bed, because it grows in such a tight little clump that without some such support it is apt to topple over when there is a high wind.

I may mention the planting of one bed in which I have it, as most people who have seen it have liked it. It is a star of eight points. In the centre there is a clump of tall Lord Cottenham Geranium; round this a circle of *Zelinda* Dahlia; next two rows of Flower of the Day Geranium, which reach down to the edge of the spikes of the star. Each alternate spike is planted with *L. speciosa* and *L. kermesina*, and the apex of each has a good plant of Golden Chain Geranium. The effect is very good.—Q. Q.

ARRANGEMENT OF INTERIOR OF A GREENHOUSE.

I HAVE just had a greenhouse erected, 16 feet by 12, span-roofed, and I wish to have a railed shelf all round it, instead of the old-fashioned stages. The height of the brick-work and wall-plate is just 2 feet. Is not this too low for the railed shelf? What height would you advise it to be made, and is 3 feet sufficient in breadth for such a sized house? I suppose the breadth and height are according to taste, but I should be very much obliged if you would tell me what height you think would show the flowers to most advantage.—G. F. W.

[If you had given us the height of your house in the centre, we should have been better able to advise you. We must presume that that is from 6½ to 9 feet, and if so, the roof will be steep, if the side walls are only 2 feet. So far as the plants are concerned, however, that will make little difference. If there is 3 feet from the ground to the wall-plate, and you propose to have a shelf all round, at least on the sides, that would give you more room for storage beneath the shelf than in the case of a two-foot wall. We are supposing that the lights on each side rest on that wall. In

that case, we would have the shelf 8 inches or so below the level of the wall-plate, which will allow plenty of light for the plants, and yet screen the pots from the direct action of the sun's rays. The lower your shelf the better will you see the plants, and the less will you see of their pots. Did you want to make the most of the shelves, and have only a path in the middle, you might make each of them $4\frac{1}{2}$ feet wide, and that would leave you 3 feet for walk in the centre. Then over that, if the roof was high enough—say 8 or 9 feet, you might either have a shelf or baskets, &c., suspended. The only drawback against this plan would be, that in a platform formed either of wood, or a border of brick and earth, and ashes for the bed, the width is too great to enable you to see and handle all the plants conveniently from the passage. Still, as a mere repository for growing plants, the arrangement would be a good one.

For mere show, the proposed width of $2\frac{1}{2}$ to 3 feet for your shelves would answer better, and the height of these may be regulated so as to be below the wall-plate just 6 or 8 inches, and then you would require to keep low plants in front. In fact, were your house only $6\frac{1}{2}$ feet or so at the ridge, you would need no shelves at all. The pots might all be on the ground level. In this case, with such narrow platforms, you would have from 6 to 7 feet of pathway; but in that you could set tall plants on the floor, and so arranged as to prevent monotony.

But for your objection to a centre stage or platform, we would have the side walls at least $4\frac{1}{2}$ feet high, the ridge 9 feet, a shelf all round 2 feet wide, and a table or platform in the centre 4 feet wide, with a two-foot walk all round. In such a case we would make the front platform and the centre 15 to 18 inches below the ridge-board.

Did we want not merely to grow but to show the plants off in such a house to the greatest advantage, then we would make a different arrangement. Suppose your walls at the sides were $2\frac{1}{2}$ or 3 feet to the sill, then we would put $2\frac{1}{2}$ or 3 feet of upright glass between that and the wall-plate; height at ridge 9 or $9\frac{1}{2}$ feet. Then suppose this house was at the end of a drawing-room, or the door of a dining-room or parlour, as soon as the door in the centre of the end was open, you might see the plants at once to the best advantage. We would not have a shelf or a level platform, but a sloping stage on each side $4\frac{1}{2}$ feet wide, the highest shelf of which would be next the wall-plate, and the lowest shelf close to, if not formed of the floor next the pathway. Only a few of the taller plants at the sides next the upright glass would be above the eye. The great proportion would be under the eye, and as you looked down on the banks of flowers and foliage on each side, little of the pots could be seen. The great amount of light in low span-roofed houses will prevent the shortest plants near the pathway in the centre being drawn. Although we have spoken of banks of flowers, there is no necessity for having them uniform, as they may be thrown every week into fresh combinations. In looking at such plants from a slight elevation, or merely from the level floor, the effect is much more striking than when you must look up to them on a level platform, or a merely raised stage, as the more the stage is raised just so much the better are the pots seen. This plan can scarcely be followed successfully unless there is side glass, as well as the top lights. We would advise our correspondent to try the effect of such an arrangement before fixing her shelves. High plants at the sides, and low plants close to the path in the centre, would show the effect at once.—R. F.]

COMBINATION OF GREENHOUSE, STOVE, AND PITS.

In your Number of July 21st is a very neat forcing-house which I think could be turned to great account, but it is not delineated sufficiently for me. I want to have a lean-to house, and I could make an outside border for Vines if I choose.

First, I want a border all round to be heated as you describe; but what width could I make it to be heated sufficiently, and what is the leaf mould to rest upon, and what depth of water would require to be in the tank? Would the tank require to be often supplied with water?

If so, I think this would be most troublesome. Would not Caithness sawn pavement cemented make an excellent tank for the water for top moisture, also for sides next walk? Then I could have the centre of the house for plants standing on either a cold bed or stage, and no earth.

What would be the most substantial material for the house, wood or iron? I want it 30 feet long. I would require it to be from 12 to 14 feet in width within. What height should I require to make the back wall above ground level for such a house? My aspect would be south-east. What width would the paths be? Would a single pipe running through the tank be sufficient to heat it? What size of pipe would it be necessary to run through it? Would the path require to be elevated to let the pipe run through it to the border? What would be the cost of heating such a house? What would be the cost of a lean-to house made of Memel Pine, the wood part, of course, all plain—no ornamental work?—J. O. G.

[The plan at page 51 of this Volume is very good for a combination of greenhouse, plant-stove, and pits outside, heated; but unless our employer allowed us and wished us to dip deep into his pocket, we should not think of such an arrangement for a vinery, though no doubt it would answer well enough. We have the other week given some instructions on tank-making. It matters not what they are made of—stone, slate, or wood—if made watertight. We have seen wood $1\frac{1}{2}$ inch thick last more than twenty years. The wood was well beat at the corners, as for a brewer's cooler, and placed firmly together with red or white lead; and water being always in it there was no chance for leakage. We think the pipes through the tank a good precaution, though not absolutely necessary. If your tank is securely covered, you get no more top moisture from a tank than from a thick metal pipe. If you wish vapour from the tank or steam, you had better leave places to open for the purpose, and, of course, these must be shut when you wish for a dry heat. But now, if you merely wished a vinery 30 feet by 14, and the border outside to be heated, we should simplify the whole affair and have nothing to do with tanks. Allow us, however, to say that heating your border outside will be of little use unless you can cover it with glass or tarpaulin, &c., with litter below it. Now, for such a lean-to house, 14 feet wide, we would have the back wall 12 or 13 feet in height, and the height in front, with wall and glass, 6 feet—half wall and half glass. In such a place we would build the back wall of fourteen-inch work, hollow. Then, if we must grow the Vines in such a house, without an outside border, and early Grapes were a chief consideration, we would take out the earth to the depth of 3 feet; concrete the bottom; place three four-inch iron pipes, about 90 feet, for bottom heat; leave them in a chamber 1 foot deep, cover with slate or stone, and then the soil above; or cover over the pipes with a foot of loose rubble and brick-work, then finer gravel, and afterwards the soil. Openings from that chamber into the house would be desirable. Then for the top heat, for early forcing, you would need about 120 feet of four-inch pipe. If Vines are planted at the back wall of such a house and then trained down the roof, you will be thoroughly independent of all outside borders, and, to a great extent, of all outside weather. Had we the chance of building an early vinery, we should follow something like the above mode.

Exactly the same mode may be followed even with the help of an outside border, and that may be made in the same way. In your climate we would decidedly recommend inside planting, even though you plant your Vines in front in the usual way. In that case your front wall should be on piers or on arches; and then suppose that your inside border is 5 feet wide or so, you might make the outside one 6 or 7 feet wide, and to be heated in the same way. Mind that below the concrete there should be means taken for thorough drainage. For late Grapes coming in in autumn there will be no necessity for heating the border at all. For bringing them in in May it will be a great advantage, and the good substantial four-inch pipe is the best material for doing it with, such as may be had from 9d. to 1s. per foot. The great point to make sure of in such an arrangement is to see that the inside border is an inch or two higher than the outside one. On such a plan the border outside will make a capital pit to be covered with glass, and it will be

very useful for salads and other things in winter. In spring pot plants should be watered carefully in such a pit, so as not to soak or puddle the surface of the border; and in summer and early autumn it would be well to have nothing in the pit at all, in order that the sun may beat unobstructedly on the soil.

If you prefer a tank, and it is all sound and kept close at the top, it will want replenishing with water very seldom. If out of sight, the best plan is to have a gauge-stick in it standing in an open pipe, and that supplied with bung, and the appearance of the stick will always show the depth of water, and through that tube or pipe water may be supplied at pleasure. If you leave open spaces in the tank, of course the water will go off by evaporation, and a fresh supply must be given. The same holds true as to pipes. The fresh supply will chiefly depend on what is lost by evaporation. Of course, if the water is forced out by expansion by heat, fresh water will be needed, as that in the heating medium has cooled.

You are more likely to know what Memel timber will cost in your neighbourhood than we can tell you. Frequently in our advertising columns the price of lights for houses is given. The more jointed the wood and the smaller the glass, the more the expense for wood. The cheapest way for such a house would be to have a fixed roof—no sashes, but strong rafter sash-bars. If the place is much exposed, perhaps it would be advisable not to have glass above 10 or 12 inches wide; but even with a fixed roof, and the rafter sash-bars 10 inches apart, you would want double the wood that Mr. Rivers uses with glass 20 inches in width. The cost of timber, therefore, depends entirely on matters of detail.—R. F.]

THE GRAPERIES OF MR. MEREDITH AT GARSTON.

THE fashionable suburbs of a large town often present many features of interest to the tourist. Dwellings more or less commodious, and all more or less ornamented externally, give tokens of the wealth and comfort that reign within; while the diversity of taste by which one villa or residence contrasts with its neighbour, affords many a lesson which it would be well to study. That occasional deviations from good taste meet the eye cannot be doubted; but these cases are so few that they may be taken as the exceptions of rare occurrence. And contemporary with the architectural display evinced in the dwelling-house and its appendages, as the fences, gates, &c., the plot of ground facing the public highway has often claims to notice which call for something more than a careless approval; and, perhaps, no branch of cultural art has made greater advance than the one which has worked so much improvement in the limited plots of ground that many occupiers only possess. It is certainly creditable to all concerned, that the small plots alluded to present so many features of interest, and, though often differing widely from each other, they are all, nevertheless, beautiful, and many of the most important features of ornamental gardening are represented here—as the bedding system, rockwork, shrubbery, and very often a glass structure, and all carefully and studiously managed. That such houses are sources of unalloyed pleasure to the man of business after the mental toil of the day is over cannot be doubted; and their external appearance leaves little doubt that the interiors are equally well furnished with every requisite for comfort.

The moral bearing of these villa homes might be dilated on to some length; but it is needless to pursue the subject further than to say that such dwellings abound on the fashionable outskirts of most, if not all, of our large commercial and manufacturing towns, of which Lancashire presents as many as, perhaps, any other county, not even exempting the metropolitan one. And as most towns have their "west end," or fashionable side, in like manner has Liverpool, although in its case it is the east and not the west side.

The pretty village, or rather town, of Garston forms one of those beautiful suburbs to the great shipping city of the west coast by which it is connected by a long chain of villages forming a continuous street of some four

or five miles. Many of them are hidden amidst healthy and vigorous-growing trees and shrubs, showing, that although they are but a very short distance from the Irish Sea, the soil, climate, and other conditions favourable to their growth are tolerably abundant; and I confess being agreeably surprised to find this the case, as the highway from Liverpool to Garston rises about parallel with and but a very short distance from the noble estuary of the Mersey, which at Garston seems two miles wide or more. That much of the verdure found here is in a measure due to the shelter from the south-westerly gales which the Cheshire hills on the opposite coast afford I have no doubt; but it is not my place to enter into the question, but to point out one of the features of a neighbourhood where one of the most successful Grape-growers of the day has located himself. As the gardening world must be familiar with the name of Meredith, of Garston, and his Grapes, a few notes on the situation and the other features of his extensive and interesting glass structures and grounds will, no doubt, be acceptable to the general reader.

On the outskirts of the village of Garston, and about half a mile or more from the northern shore of the river or rather bay of the Mersey, Mr. Meredith has fixed his vineyard. The situation is one of those slight elevations which merely afford sufficient fall for what drainage might be wanted from stokeholes and such places, the ground of the district generally being of that slightly undulating character which distinguishes it from the flat rich pasture lands which border the river Mersey in the upper part of its course. The soil, too, at Garston is much paler in colour, though in its component parts it seems to contain as much sand as is found in the rich market-gardening districts to the north of Altrincham and elsewhere. The subsoil seemed a dry compound, of which sand rather than gravel formed the most important part. It certainly was not of that hungry pernicious character which some sandy or gravelly subsoils often are. On the contrary, I should say the subsoil was, perhaps, as agreeable to vegetation as any which I ever met with that did not contain stone; for, be it observed, that many stony subsoils are the favourite abode of tree roots, even when the surface soil is a good one; but in the case of those at Garston, from what little I could hear, I should think that stone was but very sparingly met with. At the same time I believe the subsoil contained within itself all the elements necessary for effective drainage; but whether additional modes of carrying off the superabundant moisture from the various borders existed or not, I am not prepared to say.

I may here observe that the whole of the glass houses were, with very few exceptions, devoted entirely to the cultivation of the Grape Vine; and when I say that there were upwards of twenty such houses, and many of them of large size, besides pits and smaller structures, it will be easily supposed that Grape-growing on an extensive scale was being pursued. Most of the glass houses were new, the oldest, perhaps, not being more than six or eight years old, while some were of more recent date; and two new ones of the present year, each 144 feet long by 28 feet wide, were not quite finished, although nearly so. These fine houses, of which some notice will be taken hereafter, were, nevertheless, occupied, as were all the others, with the favourite plant which seemed to thrive so marvellously under Mr. Meredith's care.

There is nothing remarkable in the structure of the houses, the most of them being span-roofed, the site not affording a high garden wall to lean them against, as is often the case in private places. The ground was in a great measure covered with span-roofed houses, placed in some cases parallel to each other, and at a convenient distance apart to allow sufficient room for the borders. The glass used was in some cases rough plate, and in others sheet, the squares generally large, though not remarkably so; whilst the pitch of roof, mode of ventilation, and other features differed but little from those to be met with elsewhere. Some mechanical ingenuity certainly was shown in the movement of the ventilation by a crank-rod that was not so much paraded in view as some similar contrivances are; but with the exception of the workmanship being good, useful, and plain, there was nothing in the outward character of the houses that differed from the generality of glass

houses of modern build. I may also add, that I believe the boilers used in heating them were mostly modifications of the saddle; and the pipes, bends, and other appurtenances such as are generally met with elsewhere. Most of the span-roofed houses had a pathway down the centre, and the hot-water pipes were but very little elevated above the floor.

Having given the above rough outline of the situation and character of the houses, it is now necessary to say something of their contents. Unfortunately, through an inadvertence on my part, I did not take such particular notes as I would have done had I thought of afterwards committing them to paper; but the character of Mr. Meredith's Grapes is so well known at the great shows in the kingdom, that it is needless to say more than merely advert to them. Suffice it to say, that those Vines which had attained something like a three or four-years' growth were loaded with the finest possible fruit. In fact, many growers for private use only, and not for exhibition, would regard the crop as imprudently heavy. Other houses a year or more younger had also good crops, and even some Vines recently planted had been allowed to bear a bunch or so; the vigorous health of the plants, Mr. Meredith seemed to say, making up for all the work they were at this early age called upon to perform. Certainly, now and then a young Vine was exempted from such hard working, but nothing like an exemption of the present year's work for the sake of another one was observable anywhere—every cane capable of bearing having its quota of fruit, and all in the most excellent condition, the youngest Vines, of course, being exempt, a vigorous rather than a rampant health pervading all. Rarely any of those long-jointed canes were to be seen which are so often met with elsewhere in newly-planted Vines, when enriching rather than good solid and suitable food is supplied them; for, be it remembered, although all the foliage presented the most luxuriant health, I do not remember noticing any of it approaching the dimensions I have heard some growers boastfully assert they have grown Vine leaves to. I mention this as a significant fact that extreme luxuriance of foliage is not wanted, neither is it always a token that the Vine is in the condition to produce the best fruit. This view of the matter was never more forcibly illustrated than in the Vines I saw at Garston, for although it would be impossible to point out finer fruit anywhere, the foliage did not in any case approach so near that of the Rhubarb as I have heard the leaves of some Vines compared to, when in point of fruitfulness they were second to those here mentioned.

As above stated, the Grape-houses presented every aspect, and it might be supposed that there might be a favourite one where the fruit attained greater excellence than in the others, but I failed to detect this—in fact, there did not appear to be any difference; and to those who may be curious in such matters, I may say that one of the few lean-to houses was placed against the east side of Mr. Meredith's dwelling-house, and, consequently, soon after midday it received no sun whatever, and yet the Grapes in this house were beautifully grown and coloured. A bunch of Black Hamburgs, which I hope to hear of figuring well at some of the shows, could not be much short of 4 lbs. in weight and well coloured, and this with a forenoon sun only. A similar house on the west side was later, but promised to be quite as good, the fruit being equally promising, as, in fact, were all the graperies. Some of the houses were devoted to one variety only, some mixed, and some to kinds requiring a greater amount of heat, or a different treatment from their neighbours, all showing the best possible result.

Of the kinds grown I regret not taking more particular notice, but I believe all the popular kinds of the day are well represented at Garston, several varieties of Black Hamburg and Muscats being found there; while separate houses were devoted to the late kinds, as Lady Downes' and Alicante, both of which seemed to be favourites with Mr. Meredith, but by no means to the extent of depriving other kinds of their due meed of attention, for all were fairly and successfully grown. But to give every Grape a more fair and equal chance, Mr. Meredith has recently added the two large span-roofed houses above alluded to, the one being for all the varieties of White Grapes, the other for Black ones; and our readers may easily conceive the noble appearance these houses will present in a year or two, when they reflect that each house would make half a dozen good-sized Grape-houses,

for the length of both of these two houses at Garston was 144 feet, and the breadth 28 feet. A spacious pathway went down the middle, the roof being partly supported by a row of pillars on each side of the path. The roots of the Vines had access both inside and out, but were planted inside. The greater part of one of the houses was planted, and the Vines were doing remarkably well; the other was not so far advanced. Many new kinds were pointed out to us as on probation, and older well-known names were also included, and we should say that when these houses are once in a bearing condition, no better lesson in Vine-culture could be found in the kingdom than they alone will present, and the student in gardening will do well to make a journey there on purpose to inspect them. Even at the present time the various stages of growth at which the Vines are seen, coupled with the magnificent fruit and the great extent to which they are grown, render this remarkable place more interesting than all the glitter of the largest bedding-out place; for be it remembered, that most, if not all of the kinds known to modern cultivators are grown here on an extensive scale, and some new kinds of promise are on trial which may figure in a high position hereafter.

Amongst others of this class we noticed a seedling presenting a very large bunch, somewhat in the way of the White Nice, but Mr. Meredith says of much higher merit. This seedling had all the appearance of a good keeper, a good bearer, and the property of ripening earlier than some of the kinds of its class, which have little to recommend them but their size of bunch. We shall be anxious to learn further of this seedling, as it evidently is an improvement in a direction that wanted amendment, and we have no doubt but Mr. Meredith will offer it to the world in due time, and if it receive his approval we need have no hesitation in accepting it as good.

Some other seedlings and new kinds were on trial, and I need hardly add that all the old and popular varieties were extensively grown, as the Trentham Black, Frankenthal, Morocco, Black Prince, and the many synonyms by which some of the well-known varieties are called elsewhere. Even those difficult to grow, as Josling's St. Alban's, and others, had a place assigned them, and were doing well, showing that with judicious care and the necessary means much may be accomplished.

VINES IN POTS.—It will afford no surprise to be told that the Vines grown and kept in pots at this remarkable place are quite on a par with the extensive houses at command for that purpose, and some hundreds of canes were pointed out that were quite fit for forcing next season that had been raised from the eye the past spring. Others still more robust were, I believe, last year's plants cut down in spring, while others for that purpose were coming on. Most of the newly-erected houses contained Vines in pots, mostly in the most robust health, either for forcing in pots or planting-out when wanted.

Our readers will understand that Mr. Meredith is a builder of hothouses, and occasionally superintends the building of others when done by private hands: consequently, when he has to furnish a house with Grape Vines, it is needless to say he is in a position to do it in the best possible manner; and it would almost astonish the ordinary observer where all the Grape Vines so prepared at this establishment could be wanted.

Mr. Meredith, however, we are informed, is in extensive practice; and the old adage of a good thing needing no recommendation being applied to his Grape Vines, we expect a visit later in the winter will find his stock thinned to a considerable extent. To those, however, about building new Grape-houses, and furnishing the same with plants best suited to their wants, as well as to give the best advice on the all-important subject of making the borders, Mr. Meredith, living in such a central situation as Liverpool, cannot fail to be of the greatest value. The condition of certain Grape-houses, altered and renewed by him in places elsewhere, attest his skill and ability that way; while the exceeding simplicity of construction of the houses, and apparent homeliness of the substances used in the border-making, give every reason to believe that Mr. Meredith is in no way extravagant in his mixtures or compounds. I here mention this so as not to deter any one from consulting one so eminently successful under the idea that they v

likely to incur a serious expenditure in carting materials from some very distant place; for few, if any, have ever yet brought a chemical knowledge of the component parts of soils and the requirements of individual plants to bear so well on their cultivation as has Mr. Meredith; and his knowledge will enable him to pronounce whether such a soil will suit the Grape Vine or not, apart from all those outward appearances which are the only guide to a less practised hand. The uniform courtesy with which he receives and communicates his ideas to others in the craft cannot be too highly extolled. As to my friend (a nobleman's gardener) and myself, no information of any kind was withheld, and the visit to Garston will long remain as one of the red-letter days not to be forgotten.—J. ROBSON.

SOME OF THE GARDENS WORTH SEEING IN ABERDEENSHIRE AND BANFFSHIRE.

WILLING to assist in directing those who have a pleasure in seeing gardens, I forward a list of gardens worth seeing in Aberdeenshire and Banffshire. Some of the places have natural scenery far surpassing anything of the kind I have ever witnessed:—

ABERDEENSHIRE.

Place.	Proprietor.	Gardener.	Town.
Slains Castle	Earl of Errol	Unknown	Peterhead.
Pitfour	Admiral Fergusson	Mr. Smith	Mintlaw.
Ellon Castle	A. Gordon, Esq.	Mr. Howitt	Ellon.
Strichen House	G. Baird, Esq.	Mr. Hoesack	Brucklaw.
Dun Echt	Earl of Balcarra	Mr. Farquhar	Aberdeen.
Fyvie Castle	Captain Gordon	Mr. Farquhar	Fyvie.
Keith Hall	Earl of Kintore	Mr. Donaldson	Inverury.
Troup House	F. Campbell, Esq.	Mr. Dallachy	Fraserburgh.
Huntly Lodge	Duchess of Gordon	Mr. Aitchison	Huntly.
Balmoral Castle	Her Majesty	Mr. Paterson	Aboyne.
Aboyne Castle	Marquis of Huntly	Mr. Sturry	Aboyne.

BANFFSHIRE.

Place.	Proprietor.	Gardener.	Town.
Duff House	Earl of Fife	Mr. Mackie	Banff.
Cullen House	Earl of Seafield	Mr. Petrie	Portsoy.
Gordon Castle	Duke of Richmond	Mr. Webster	Fochabers.

The best time to see gardens in this part of the country is the months of August and September. The places named are all within easy distance of their respective railway stations.—J. H.

[We wish every reader of our Journal would send us a list of the gardens worth visiting in any county, with the names of proprietors and gardeners when known.—EDS. J. or H.]

GLADIOLUS DISEASE AND NAME.

AN inquiry was made in THE JOURNAL OF HORTICULTURE of August 11th regarding the disease which has attacked the Gladioli so much this season. It has been most prevalent in this neighbourhood, particularly in the dry sandy soils; we, therefore, may conclude the disease does not arise from damp or excess of moisture, as is sometimes supposed. On the other hand, I am inclined to believe that the unusually dry spring has in a measure aggravated, although it cannot have caused, the disease, it having appeared to some extent both in wet and dry seasons.

It is certainly a great drawback to the general cultivation of so showy a flower, for nothing can be more disappointing and nothing more unsightly than the diseased plants, the leaves of which, and in most cases the whole plants, have to be cut away to preserve the neat appearance of the bed.

As "D." of Deal, has had some information lately about the bulb from M. Verdier, and visited the chief growers on the continent, he may, perhaps, be able to prescribe a remedy.

Mrs. Loudon speaks of the bulbs being left in the ground "om year to year," and that at Spofforth in Yorkshire, where the soil is a rich yellow loam, there are clumps of Gladioli which have been left in the ground undisturbed for more than twenty years and which bloom magnificently. Similar treatment is given to the beds of scarlet Gladioli in the garden at Blair Adam, in Scotland, which are very "splendid."

I am not aware whether all the varieties are equally

with what we have now. Whether the experiment of leaving them in the ground would be worth trying we should be glad to know.

I should also be glad to know, now we are on the subject, the proper pronunciation of the word "Gladiolus." I have heard so many conflicting opinions that it would be rather a relief to have the matter settled. The accent is often put on three different syllables thus:—Gladiólus, Gladiólus, and Gládiolus; the first is most common and the most incorrect; the second is the pronunciation generally supposed to be correct, and the way we believe Mrs. Loudon accents it. I have, however, been corrected in that; and I find from various Latin dictionaries, Ainsworth, Riddle, Andrews, and others, that the accent should be on the first syllable, thus—Gládiólus, or rather that there should be no particular stress on either, if it were possible to pronounce the word without; but the little accent used should be placed upon the first syllable, *Glad*. We have more authority for this than any other way: therefore, conclude it most correct, but I should feel obliged for a little information on each of the above queries.—R. T. E., *Shrewsbury*.

[There is no doubt as to the proper pronunciation of the name. It is *Gládiólus*, as if there were no *o* in the spelling, and the accent on the *i*.—EDS. J. or H.]

BATTERSEA PARK.

HAVING heard of the rare plants that were bedded-out here I was induced to pay it a visit on the 23rd ult., and was agreeably surprised to see how well the materials of landscape-gardening were worked out by Mr. Gibson, the superintendent.

All who recollect the difference between the present diversified and the former flat surface must be delighted with the pleasing variety produced by the mounds formed of the dredgings from the river Thames, by which depth is given to the river, and mounds and slopes of artificial beauty to the Park. The effect has also been heightened by the introduction of large trees which had been planted individually and in masses in the autumn, and are now looking well. The lake is also an interesting feature, which has lately been improved by more irregularity in parts of its outline to produce variety.

After entering the Park from the Chelsea New Bridge I turned to the left, and proceeded westward along shrubberies and borders edged with *Lobelia speciosa*; then *Nierembergia gracilis*, which does not fill up the space allotted to it well; then Scarlet Geraniums, backed by Dahlias. The broad mass of the light green foliage of Pinks, edged with *Lobelia speciosa*, looked well on the left side of the walk.

The next scene on the walk leading to the right presents a row of Dahlias to the back; then *Calceolaria Aurea floribunda*, edged with *Nepeta amethystina*, and further on four rows of Crystal Palace Tropæolum, edged with *Cerastium tomentosum*, with an opposite of double white Feverfew and Tropæolum. Then around the shrubberies to the right and to the left are Dahlias, double white Feverfew, and Nosegay Geranium, edged with *Cerastium tomentosum*.

Opposite the steam-boat landing is a broad road leading south to the fountain, and north of the lake. On one side are Dahlias, edged with a broad band of Tropæolum elegans. After crossing an open piece of lawn, on the right are rows of Dahlias, then Scarlet Geraniums, edged with yellow Calceolarias; and on the left are Dahlias, then Commander-in-Chief Geranium, edged with crimson-brown Calceolarias. Continue on the main road, leaving the fountain on your right, beside the walk diverging to the left; on one side is an edging of *Lobelia speciosa*, then *Calceolaria Aurea floribunda*, then Punch Geranium, backed by a broad and full band of Chrysanthemum frutescens album. On the other side is an edging of *Koniga maritima variegata*, then brown Calceolarias, then Nosegay Geranium, backed by double white Feverfew, which is not sufficiently high for the position in which it is placed.

Across the road to the fountain, and a few steps more take you to the north side of the lake. The outline of the lake is varied by the contrasted position of bays, inlets, and smaller indentations with islands, and acts to heighten the diversity

of appearance without destroying breadth of effect. An engine-house is visible in the distance, which supplies the lake with fresh water. We are told that on proceeding eastward and south of the lake the Rose-ground and other interesting scenes of floral beauty present themselves.

From the fountain a long broad walk runs westward, planted with a row of young Elm trees at each side. Turning from the end of the broad walk to the right we pass northward to a most interesting scene. On the south of Biocchi's refreshment-tent are two crescent-shaped beds. At the back, near the shrubs, are Hollyhocks, then Phloxes of various colours, then *Chrysanthemum frutescens album*, then Victor Emanuel Scarlet Geranium, then Minnie Geranium, then yellow Calceolaria, edged with Lady Plymouth and *Lobelia speciosa* alternately and diagonally. In front of each crescent are seven beds: the 1st, an oblong, with brown Calceolaria, edged with Geranium peltatum variegatum. 2nd, A circle, Anthony Lamotte Geranium, edged with *Lobelia Paxtoniana*. 3rd, An oblong, Stella Geranium, edged with Little David Geranium. 4th, A circle, filled with Calceolaria Canariensis, a splendid bed. 5th, An oblong, Miss Nightingale Heliotrope, edged with Bijou Geranium. 6th, A circle, *Centaurea candidissima*, edged with *Lobelia Paxtoniana*. 7th, An oblong, Stella Geranium, edged with Anthony Lamotte Geranium. The opposite is a duplicate of the above, with the exception of a circle centered with Madame Vaucher, a variety with large trusses of well-formed pure white blossoms. Going round from each end of the terrace, at the back are Dahlias; then Gaines's yellow Calceolaria, edged with *Nierembergia gracilis*. Then, proceeding westward on the broad walk, the next scene is an opening into the Park between high mounds picturesquely disposed, but the effect is marred by two beds planted with Hollyhocks. A few yards further on a fine lawn opens up, displaying a varied landscape to the wooded hills beyond, with church-spires, villages, and the Crystal Palace glittering in the sun. The varied and serpentine plantations on the left beside the walk are in part edged with Gaines's yellow Calceolarias, *Pentstemons*, Catmint (*Nepeta amethystina*), backed with Dahlias. The next bit of flower garden comprises an oblong with two circular beds; the first circle contains Geranium Hendersoni, edged with Cloth of Gold Geranium; the oblong, two rows of *Amaranthus melancholicus ruber* in the centre, then one row of *Centaurea candidissima*, edged with another row of *Amaranthus*; the other circle, Scarlet Geranium, edged with Bijou Geranium.

Still farther on the right are to be seen three large circles. The first contains Punch Geranium, edged with Geranium peltatum variegatum; the second, Crimson Unique Geranium, then a white Pelargonium like Fairest of the Fair, then Punch Geranium, then Pink Geranium, edged with Baron Hugel Geranium; the third, Trentham Rose Geranium, then Punch Geranium, edged with Geranium peltatum variegatum. On the left are several beds:—A circle filled with *Canna indica*, the fine foliage waving in the breeze; another circle of *Tritoma uvaria*, edged with *Nepeta amethystina*; an oblong, Geranium Hendersoni, then Christine Geranium, edged with Stella Geranium; two circles, Bijou Geranium, edged with *Lobelia speciosa*; another bed with a lot of Geranium Hendersoni in the centre, then Trentham Rose, then Geranium peltatum variegatum, edged with *Lobelia speciosa*; an oblong, Stella Geranium, then Commander-in-Chief Geranium, edged with Pink Geranium; two small circles, Madame Vaucher Geranium, edged with Little David Geranium. On the right are three circles; the first, Minnie Geranium, if I recollect rightly, edged with Trentham Rose Scarlet Geranium. A large circle filled with *Coleus Verschaffelti*—one of the most ornamental and picturesque-leaved plants yet introduced, amongst which it almost stands unrivalled for rich and gorgeous colouring—edged with *Centaurea candidissima*, is one of the most magnificent beds in the place: the secret of success here is having retained them in pots. The third is a circle of *Tritoma uvaria*, edged with Minnie Geranium.

We have now arrived at the lodge gate on the west side. A short turn and you are on a walk leading east by south through a shrubbery with a ribbon-border on each side, then across a portion of the lawn, and you enter what we were told is called the Italian garden. On turning to the right, the first bed which presents itself is filled with *Musa Caven-*

dishii, *Dracæna purpurea*, and *D. terminalis*, and carpeted with *Arctotis repens* with its long silvery branches that literally stick to the ground. The bird's-eye view of the flowery vista beyond is most attractive. The next bed is an oblong filled with *Humea elegans* plunged in pots. Beds of *Canna indica* edged with *Statice* succeed. The *Cannas* are highly ornamental, producing a very rich and oriental effect by their large, broad, massive foliage terminated by racemes of crimson or scarlet variously-lobed flowers. The other beds consist of Variegated Periwinkle plants (*Vinca elegantissima*) and *Yuccas*. The circular beds opposite contain Vesta Geranium, edged with Minnie Geranium; Punch Geranium, edged with Geranium peltatum variegatum; Minnie Geranium, edged with Baron Hugel Geranium. There are in addition beds of *Caladium giganteum* and *Ficus elastica*. A long serpentine bed gay with yellow Calceolarias and Geraniums; and beds of *Vinca rosea alba* and *V. rosea ocellata*. The Cloth of Gold Geranium is very conspicuous as an edging to some of the beds.

On the circuit as you approach a portion of the lake the large frosted foliage of the *Salvia argentea* as an edging is also a conspicuous object. Then come a circle of Vesta Geranium, edged with Mountain of Light Geranium; two oblongs with Bijou Geranium and edgings of *Lobelia speciosa*; then a circle of Golden Chain Geranium, edged with *Lobelia speciosa*; another circle of *Coleus Verschaffelti*, edged with *Centaurea candidissima*. A crescent-shaped bed on the higher ground in front of the shrubbery filled with *Wigandia caracasana* is singular for its very large foliage. An edging of *Farfugium grande* is also worthy of notice.

From what has been faintly described it may, perhaps, be inferred that the rare collection of plants bedded out at Battersea Park is not surpassed, if it is equalled, in any other park, pleasure grounds, or flower garden in the kingdom.

The broad space between the road and the river Thames from Chelsea New Bridge to near Battersea Bridge is partly marked out for improvements; and to judge from what has been done by Mr. Gibson, we may confidently expect that such a fine site will be converted into a magnificent landscape scene.

W. KEANE.

MASSING OF COLOURS AT LINTON PARK.

I AM tempted to add a few words to the praises given in your last Number to the splendid results of Mr. Robson's grouping single colours in masses.

It cannot have escaped the notice of those who have seen Rubens' masterpieces that that great master of colour produced the main tone and effect of his paintings by the very same course now taken by Mr. Robson—a judicious use of his deep blue and deep red. The same effect may be seen, arising from the juxtaposition of two, or at most three, brilliant colours without any attempt at shading, in the illuminations with which old missals, &c., are filled, produced by the busy idleness of those comical mediæval verberates, the monks. So that the grouping in question arises from the purest taste, as well as being productive of the most artistic results.—H.

DRYING EVERLASTING-FLOWERS— GLADIOLUS DISEASE, &c.

IN No. 124 of THE JOURNAL OF HORTICULTURE is an inquiry how to dry Everlasting-Flowers—apparently a very simple thing, but in fact not so. I have been in the habit of hanging *Xeranthemum* and *Acroclinium* up by the flower-stalk, the flowers downwards; but find that in doing so the flower when dry is very apt to break off the stalk, being then very brittle. I now cut them off with a sharp knife just before the flowers expand, and then lay them flat on a shelf in the greenhouse, full in the light. This causes them to expand and dry with the flower in the proper position.

When they are wanted for use I procure some wheat straw, 4 or 5 inches long, as may be required, and insert the flower-stems in them, and then make bouquets in any fashion desirable.

I will add that to do this I collect in the fields and woods handsome Grasses just before they turn white or ripe; these intermixed a little tastily make very handsome ornaments.

for chimney-pieces, &c. I have some now under glass that look as fresh as when cut two years ago.

Rhodanthe maculata is best hung up by the stem, flower downwards.

I have seen in a window one of the *Campanulas*. It seems like a trailing plant, and covered with light blue stars, and is very pretty for a window. Can you inform me which of the *Campanulas* it is?

A few of my *Gladiolus* have failed as you described, but

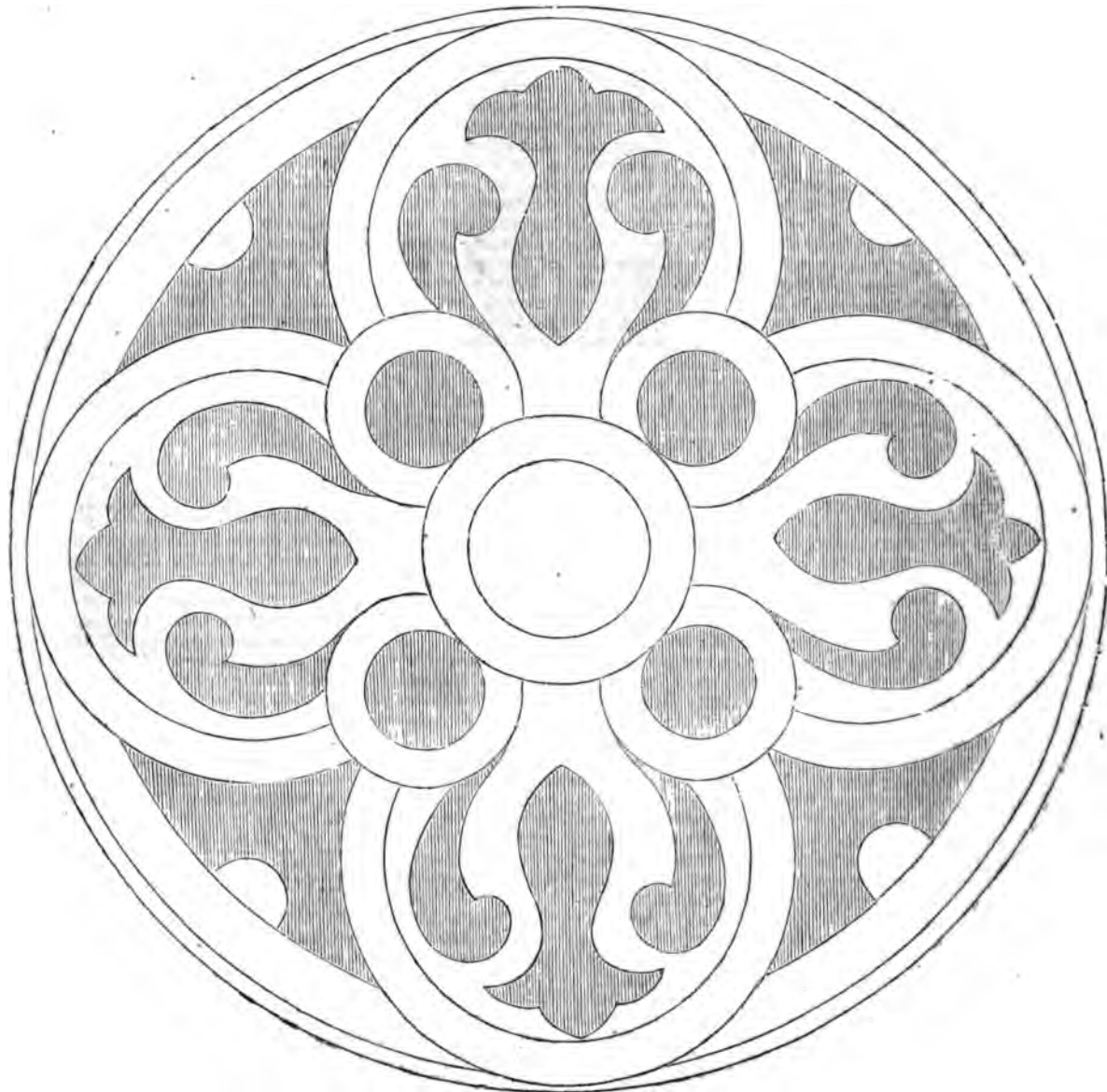
think it proceeds from the dry hot weather, as the bulbs do not appear diseased. I may remark that it is only those that have been in the ground all the winter that are thus affected; those I potted and afterwards put out are not so. Can any of your correspondents give a few recipes for cheaply dyeing grasses—say green and crimson?

Is there any other Everlasting-Flower you could name requiring the same culture, &c., as *Xeranthemum*, *Acroclium*, and *Rhodanthe*?—T. H. C., *Walsall*.

FLOWER-GARDEN PLAN.

I AM recommended to make a garden (as by plan), described as "an embroidered garden with Box-edgings and

coloured gravel." I think it would suit the place it is intended for; but having had no experience of such gardens,



should be glad if you would inform me whether they are kept in order without any very great amount of skill and labour.—NEW FOREST.

We think your embroidered garden will look very well, and more especially so if you can look down upon it—that is, if the beds are from 15 to 30 inches below the ground surrounding it.

But for the sake of too many sharp points,

and though they look rather well with Box or stone edgings, they would be annoying on grass.

We should deceive you were we to say such a garden would be easily kept. The Box must be regularly and often clipped, and the clippings must chiefly be picked up by hand. We presume the centre is to be grass: if of a bright colour it would kill the other beds.]

VEGETABLE TERATOLOGY.

A VARIETY OF PAPAVER WITH ANTHERS TRANSFORMED TO CARPELS.

DE CANDOLLE, in his "Organographie Végétal," figured a head of Papaver around which two or three of the stamens had changed into capsules. Subsequently, in 1832, I presented to the Congress of Naturalists at Vienna a more complete specimen of a similar monstrosity, the greater number of the stamens being in this case transformed into capsules more or less large. During the summer of 1839 I learned, that at some miles from Breslau there was a whole field of Papavers metamorphosed in the manner indicated. I obtained a considerable quantity of them, in all degrees of transformation, each central capsule having round it from one to sixty small supplementary capsules, and, what is very important, ripe seeds existed, not only in the principal capsules, but also in many of the accessory ones. The following year (1850), I sowed a good number of these seeds, purposely selecting the contents of the large capsules round which were arranged the smallest ones; I sowed these seeds in two different places—viz., one packet in a compartment well exposed to the sun; the second in a small sheltered garden. The result proved clearly that the metamorphosis in question was induced by circumstances the most favourable to the luxuriant growth of this species—namely, good soil, full exposure to the sun, and the greatest possible space for each plant.

In the compartment first named, the foremost part alone was unshaded; the other part, forming a partial slope, was shaded from right to left by some small bushes. At this latter point, the seed which sprung up in abundance was not at all thinned, so that the plants, more crowded, could not attain the same height as those of the other portion, where there was more space for their development. Nevertheless, of eighty of the first plants (of the portion not shaded), ten only did not present any trace of metamorphosis; all the others showed it in the most varied manner, though certainly it only attained its maximum of energy in ten cases. In the portion of the ground much shaded, where the second lot of seeds had sprung up, most of the heads showed metamorphosed stamens; but the number of these latter was, in general, very limited—one, two, ten, for each central capsule, and, among sixty of these capsules, two, at the most, had from forty to fifty small supplementary ones. Moreover, when even these small capsules were very numerous, and formed a circle round the central one, there remained a tolerable number of untransformed stamens on each head. Formerly I had supposed the metamorphosis to have absorbed all the male organs of the same flower; it was owing to my not having followed the phases of this transformation, my observations having been confined to the capsules which were already mature.



The metamorphosis begins ostensibly by the appearance of a substance which, produced with the torus, is interposed and developed between the bases of the filaments of the stamens, with which it effects a junction in the form of a ring. Subsequently this substance surrounds the principal capsule, either in part (in which case the metamorphosis only affects a small number of stamens), or entirely (when the most of the stamens are transformed). But in every case it is only the interior ranks of the stamens which become monstrous; the exterior ones preserving their normal form. As soon as the junction of the basis of the stamens attains the length of from 2 to 3 lines, the transformation of the anther to a carpel commences. At first the connective is swelled and becomes convex on the back, opening in a split in front. The exterior valves of the cells of the anther project, and become reflexed behind, in the form of wings. It is these which form the large and non-papillous border of the stigma. At the same time the external border of the partition of the anther becomes more prominent, and covered with papillae. It is this which forms the true stigmatic line which answers to the papillous rays of the stigmatic disk of the normal capsule. The analogy between the two is evident. The stigma is already formed when the ovules have not yet appeared. Their formation begins by the dilating of the connective: this organ opens more and more in front, and its cavity, which seems bordered by stigmatic papillae, soon shows the rudiments of the ovules. In proportion as this cavity becomes more profound (deeper) the upper part of the metamorphosed stamens takes the form of a hollow club, in which are developed by degrees the longitudinal ranks of the ovules.

Here my observations close. When the number of monstrous stamens is considerable, and, consequently, close on one another, they frequently split in two, three, four, together from the base to the summit, forming thus small capsules, with two, three, or four stigmatic rays, which come much nearer the normal capsule. It often happens, also, that ordinary stamens are joined to those which are metamorphosed. The above experiments are susceptible of being repeated with new modifications, and the subject, so far from being exhausted, promises interesting discoveries in science. A fact well established, is that the monstrosity in question is perpetuated from seeds during two generations, and ought, perhaps, to receive as a distinctive title, the name of *Papaver officinale*, var. *monstrosum*. The preservation of a plant so singular and interesting is worthy of all the care of horticulturists.—PROFESSOR GÖPPERT.—(*Flore de Serres*.)

HARDY AQUATICS.

Will you state the names of a few water plants capable of bearing the full light and heat of the sun? In the grounds of a house to which I am moving, the lawn is separated from a field by a long piece of ornamental water,

the greater part of it entirely without shade. The late residents have for years kept swans on it; the consequence of which is, that the water and its banks are as completely unclothed as if it were a mere tank. My gardener says

Ferns will not bear the heat of the sun on the higher part of the banks, and that they would object to their roots being under water during the winter and rainy season, as the water is then much higher.—L. R.

[Instead of being troubled we should be delighted with the piece of ornamental water. We would clothe it with Willows and Alders. Of Willows, common Weeping, American and Kilmarnock ditto, and Silver-striped. Alders, Cut-leaved, Heart-leaved, and Hoary-leaved, which, with some shrubs, as Dogwood, &c., would very soon clothe it. The Giant Cow Parsnip is a very effective plant for the margin of pools, and once planted takes care of itself. For the water, if it be large, the following may be planted in the deepest parts:—Nuphar lutea, Iris pseud-acorus, Typha latifolia, Alisma plantago, Villarsia nymphoides, Nymphaea alba, Alisma lanceolata, and Rumex hydrolapathum. For the margin, or a few feet within the water:—Caltha palustris, C. palustris flore-pleno, C. parnassifolia, natans, and minor; Butomus umbellatus; Calla palustris; Alisma ranunculoides, natans, repens, trivialis, and parviflora; Cardamine pratensis, C. pratensis flore pleno, C. amara latifolia, granulosa, prorepens, and dentata; Typha angustifolia, minima, and minor; Thalia dealbata; Swertia perennis; Ranunculus tripartitus, obtusiflorus, and aquatilis; Nuphar pumila and advena; Nymphaea odorata, pygmaea, nitida, and minor; Carex paniculata; Degeneria arundinacea; Glyceria fluitans; Catabrosa aquatica, and C. viridula; Phragmites communis; Hydrochloa aquatica (an annual); Alopecurus geniculatus. Hottonia palustris and Richardia ethnopica require protection in winter unless planted a foot or more below the surface. There are several more, but these strike us at the moment. The Pampas Grass grows well in wet places, and would not doubt luxuriate on the margin of water. We do not know the name of any person that sells aquatics, which is much to be regretted, as there are thousands of ponds and lakes quite barren, chiefly because people do not know of anything to plant in them, and if they do, nobody can tell them where they are sold. Any enterprising nurseryman might open up a good trade with aquatics. We will publish a few notes on their cultivation.]

ROYAL HORTICULTURAL SOCIETY'S COMMITTEES.—AUGUST 25, 1863.

FLORAL COMMITTEE.—Rev. J. Dix in the chair. Seedling Dahlias formed the principal feature of this Meeting, and many very good flowers were exhibited; but the standard of perfection is now raised so high, and so many excellent varieties are in cultivation, that it requires something very superior to enable a seedling of the present day to merit a high award.

Mr. Keynes, of Salisbury, entered sixteen seedlings of the present year, all of them of considerable merit, or Mr. Keynes' name would not have been attached to them:—Fanny Purchase, a beautifully-formed, medium-sized, bright yellow, very first-rate in quality—first-class certificate; Surety, a dark-shaded buff, the backs of the petals tinged with rosy-red or cinnamon, perhaps a little too coarse a flower—second-class certificate; Anna Keynes, a very fine and delicate flower, white ground, petals tipped with pale lilac—second-class certificate; Earl of Pembroke, a magnificent and showy flower, deep claret, in form resembling and equalling Lord Derby—first-class certificate; Regularity, white ground, spotted and striped with maroon or purple—second-class certificate.

Mr. Legge, Edmonton, exhibited Crimson Perfection, a fine promising flower—commended; Formidable, a Fancy variety, white ground tipped with rosy crimson—second-class certificate; The Bride, a very pretty flower, good form, creamy white ground, shaded with purple—second-class certificate; Nonsuch, tawny or deep orange buff, good form—commended.

Mr. Wheeler, Warminster, exhibited Symmetry, fine dark crimson maroon—commended; Cornet, a dark claret with a lively bright glow on the surface of the petals, a very promising and useful medium flower—second-class certificate.

Mr. Follenhake, the Rev. J. H. H. exhibited a fine spike

of his seedling Willingham Defiance, bright pink, full circular flowers, a very nice flower—second-class certificate. Mr. Bird Porter, Volunteer, dark ruby, very fine and full flowers; a spike of this plant would have probably gained for it a higher award—second-class certificate. Messrs. Downie, Laird, & Laing, Queen, creamy white, fine full flower—second-class certificate. Mr. Chater, Acme, a pale delicate bright rose of excellent form and distinct—first-class certificate. Mr. Chater sent also a collection of twenty-four fine flowers.

Messrs. Veitch, Chelsea, exhibited Liliun Neilgherianse, a beautifully-formed cream-coloured flower, resembling Brownii and longiflorum—second-class certificate; also two plants of Liliun lancifolium album. These Lilies were purchased at Mr. Stevens' sale in February last in a collection of Japanese bulbs.

Messrs. E. G. Henderson exhibited eighteen plants of a new bedding Pelargonium Mrs. Benyon, of dwarf habit, fine scarlet trusses, foliage very similar and quite equal to Mrs. Pollock—first-class certificate; Pelargonium Rosette, white variegated foliage, with pale rose flowers. Also a collection of twelve seedling variegated-foliaged Pelargoniums of great interest. Nos. 82, 53, 44, 5, appeared to be promising kinds.

Mr. Bull, Chelsea, exhibited Vallota purpurea eximia, exquisite in the form of its compact head of circular flowers, rather lighter in colour than V. purpurea; and although not a new variety, a scarce one—first-class certificate.

Mr. G. Smith, Hornsey Road, brought cut blooms of his superb Scarlet Pelargonium Lord of the Isles, which was awarded a first-class Certificate at Chiswick on the 11th ult. It was much admired by those who had not seen it before.

Mr. Amey sent a seedling Ageratum of no particular merit, little differing from the one in general cultivation.

Mr. Melville, Dalmeny Park, sent cut flowers of Calendula officinalis, but they were too much injured to be examined.

Mr. Backhouse, York, sent Cyrtanthus (Gastronema) sanguineus, a very pretty amaryllidaceous plant of various shades of rose and pink, said to be as hardy as Gladiolus gandavensis. Should this prove to be the case it will be a very useful and ornamental plant—first-class certificate.

Mr. Bateman exhibited a very fine plant of Epidendrum vitellinum with four spikes of flowers. Although not equal to Epidendrum vitellinum major, it was a specimen of good cultivation, and a special certificate was awarded. Mr. Bateman sent with this Orchid a very interesting paper, which was read before the Committee, on the cultivation of this interesting family; and although it contained no information which had not been previously given on the subject, it will certainly afford a fresh impetus and give encouragement to the admirers of Orchids. Mr. Bateman particularly directs the attention of all cultivators of Orchids to considering the different climates from which they receive them. He has found as well as others (J. Day, Esq., and Messrs. Veitch), that many kinds which have been injudiciously treated by being grown in a house of an unnatural temperature to them, have perished or imperfectly developed themselves: hence the necessity of attending to the climate of the country of which they are natives. It will be found that an ordinary greenhouse is all the protection that many of these lovely flowers require. Indeed, Lycaste Skinneri has kindly accommodated itself to the temperature of a lady's drawing-room, where it has not only reproduced its flowers, but formed fresh bulbs.

Plants of Scarlet Pelargoniums Waltham Pet and Mrs. Cowper were brought for comparison, but this object was defeated, the plants of each kind not being of the same age and not grown under the same circumstances; the majority of the Committee, however, were inclined to prefer Waltham Pet. These dwarf Scarlet Pelargoniums will be found most useful for decorative purposes, especially for baskets and vases.

FRUIT COMMITTEE.—Mr. H. J. Veitch in the chair. A seedling Black Grape was received from Mr. John Matheson, gardener, Coddington, near Winslow, which bore considerable resemblance to the Black Hamburg; but still distinct, both in texture of the flesh and in flavour. Having been grown in a pot the fruit was evidently not sufficiently developed, and the Committee recommended that Mr. Matheson

plant the Vine out, and give it a good chance of showing its true characteristics. It may prove a good thing.

Mr. Wm. Melville sent two fine bunches of his new Grape Muscat Champion, which has been before the Committee two or three times before; but on this occasion the bunches exhibited far outdid those previously shown. The berries were as large as those of Mill Hill Hamburgh, and the bunches were short, wide-shouldered, and like a bunch of grapes shot. The flavour was delicious, and had just enough of the Muscat flavour to be satisfying. The colour, however, still remains brownish-red, but we are of opinion that by management it may become as black as a Black Hamburgh.

Mr. Gayland Hadwen, of Fairfield, Manchester, sent a bunch of Grapes under the name of Muscat Lunel, which was not that variety, but evidently what is called the White Tokay or White Nice.

Mr. Andrew Dick, of Sudbury Hall Gardens, near Derby, sent two sorts to be named, one of which was the old Black Prince, and the other a variety that could not be identified.

Mr. Edward Pierce, nurseryman, Yeovil, sent a dish of a seedling called the Cricket Peach. The fruit has the dark appearance of Violette Hâtive, and is of large size; but it is very different from that variety, and has large flowers instead of small ones as the Violette Hâtive has. The flavour was very rich and excellent; but the great recommendation of the variety is its hardiness, Mr. Pierce having stated that for the last two years, while all the other Peach-buds in his nursery have been killed by frost, these remained uninjured.

A Peach was sent by Mr. C. Griffith, gardener to A. F. Parton, Esq., Cholderton House, near Salisbury, which proved to be Yellow Admirable.

Mr. Edward Cooling, nurseryman, of Mile Ash, near Derby, sent a Scarlet-fleshed seedling Melon, which was of oval shape, ribbed, and netted. The flesh was tender and melting for a Scarlet-fleshed Melon, and of tolerably good flavour, but not sufficiently rich to recommend it as a new and desirable variety.

A seedling Apple sent by John Gidley, Esq., Bedford Circus, Exeter, was raised from Cornish Gilliflower. It was a nice-looking Apple not unlike the Early Harvest in appearance, but far inferior to it in flavour. It was not considered to possess sufficient merit.

Mr. Chater, of Saffron Walden, sent specimens of a seedling Apple called Elizabeth Pine that were gathered in October, 1862: they, of course, were much shrivelled, and the flavour was gone. It is a pity Mr. Chater did not exhibit them two months ago.

WORK FOR THE WEEK.

KITCHEN GARDEN.

A GREAT change has taken place in the weather since last week. Frequent showers have greatly refreshed vegetation. Now is the time to be busy with the hoe in earthing-up the various crops that require it, and also for planting-out those that, from the dry state of the weather, could not be put out before. Broccoli, where there has not been sufficient planted, large plants may yet be put out with success. They should be laid-in with a spade in a slanting direction. Earth-up the advancing crops. Cardoons, earth-up for blanching in favourable weather. Celery, proceed with the earthing-up in proportion to the demand. Some of the very latest crop may also be planted in rows to stand through the winter. The haulm of Peas laid by now in a dry place is a good material for covering Celery during severe frost. Cabbage, the seedling plants intended to stand through the winter to be pricked out in nursery-beds of light soil at 5 inches apart. This will be found of great advantage by inducing a stocky hardy growth. Endive, continue to make successional plantations. Some of the first-planted-out will now be in good condition for tying-up for blanching. A few only at a time to be done, and these tied loosely to allow the heads to swell out large. Lettuce, a small patch of Bath Cos sown now will, if the autumn prove mild, be more valuable than those sown earlier. Mushrooms, beds may now be made either in sheds or in the open air. Onions, no time should be lost in getting the crops

stored when fully dry, as the ground from which they are taken is generally used for Cabbage. It should be immediately trenched-up. If manure is necessary, let it be laid on the top of the trenched soil and fork it in. If, however, the ground was well manured for the Onions, it ought to carry the Cabbage through, and that will always come the better, because, if too much manure comes in contact with the roots in the autumn, it induces a succulent luxuriant growth, which renders them very liable to injury from alternations of frost and thaw in the winter. Parsley, thin the summer sowing while in a young state, the plants will then gain strength to stand the winter. A portion of the spring sowing to be cut down. Tomatoes, gather the fruit as it ripens, remove all the shoots that shade it, also some of the leaves.

FLOWER GARDEN.

Unless some precautions are taken to keep the taller plants in the beds of geometric flower gardens within proper limits, they will be likely in a short time to grow too high, and will disturb the uniform appearance essential to this style of gardening. A constant watch should, therefore, be kept on plants likely to exceed the standard height, and by frequently pinching back or pegging down endeavour to keep the same-pattern beds at an equal height. At this season, with beds of flowering plants, frequent cutting-back and trimming will be required to prevent straggling in free-growing plants, and this the late rains will encourage. At the same time, allow no dead flowers or seed-pods to remain on the plants. By careful attention to these little matters the season of blooming may be prolonged till the plants are destroyed by frost. Although the present month is a favourable time for transplanting evergreen trees and shrubs, it generally happens that a large amount of this kind of work is put off until so late that the plants have no time for pushing a few fresh roots to enable them to resist the cold drying winds of March. It will also be found that plants lifted during this month will require but little attention in the way of watering next spring and summer compared with others transplanted in winter and spring. The removal of deciduous trees and shrubs to be postponed until they have shed their leaves.

FRUIT GARDEN.

The gathering and preservation of fruit is the principal work here. Peaches and Nectarines should not be allowed to remain on the tree until what is technically called dead ripe. A little degree of practice will enable a person to determine the degree of ripeness at which it should be gathered without resorting to the common and barbarous way of pinching. Plums should be allowed to remain until perfectly ripe; and although something may be lost in bulk by being allowed to remain on the tree, the flavour will not be deteriorated. Such as the Impératrice and Golden Drop, if protected from wasps, may be kept until a very late period in the season. Apples and Pears generally fall as soon as they arrive at an early degree of ripeness. That period must be anticipated, and their removal effected as soon as it is ascertained. After gathering, the fruit intended for keeping should be laid out in the fruit-room for a week or ten days, and exposed to a free circulation of air. The fruit will be found clammy from perspiration. It should then be carefully wiped and laid out thinly in the store-room, which should be kept, as soon as the fruit is introduced, securely closed and protected from any very material alternations of temperature.

GREENHOUSE AND CONSERVATORY.

Climbers will always require attention to keep the shoots in their proper places. Take care in training that the part of the trellis or stakes near the bottom is not bare of flowering shoots, as the beauty of the plants depends upon their being clothed with foliage and flowers from the rim of the pot upwards. The potting of Hyacinths, Narcissi, Tulips, &c., for forcing must soon occupy attention. About equal portions of loam and leaf mould, with a sprinkling of sand, will be suitable soil for them. After potting, place them on a dry bottom, and cover the pots 2 or 3 inches deep with ashes, preserving them at the same time, as much as possible, from heavy rains. Under this treatment they will fill their pots with roots, and will be in readiness for forcing when wanted. Most of the class of bulbs known as Cape bulbs, if obtained now, might, by the aid of a little extra

heat, be had in flower at various periods throughout the winter and early spring. Any of the free-growing species of *Isia*, such as *flexuosa*, *viridiflora*, *conica*, &c., would be suitable, as also would be the varieties of *Sparaxis tricolor*, and *Amaryllis vittata Johnsoni*, which are splendid, and may be bloomed by gentle forcing. *Lachenalia pendula* and *tricolor*, with many species of *Oxalis*, would serve to increase the variety, and are all handsome. *Ornithogalum aureum* is a fine orange-flowered species. *Cyclamen coum*, *vernum*, and *persicum* ought not to be omitted.

PITS AND FRAMES.

Let scarlet and other *Geraniums* struck in the open ground be taken up and potted immediately they have made roots. They will require a close frame for a week or two, when they should be placed on a dry bottom in a southern exposure to harden them for the winter. For the same purpose *Verbenas*, *Petunias*, &c., struck in pans, and intended to be kept in them through the winter, should be placed in a similar situation, at the same time stopping the points of the shoots. The principal object should be to keep them as hardy as possible by fully exposing them until they are placed in their winter quarters.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE glorious rains have come at last, and refreshed the thirsty earth, and cheered up the countenance of many a resident in cottage homes. It will also be a great boon to the farmer; delaying his carrying, it is true, but making his Wheat tell better in the bushel, and scattering insects and mildew from his fields of Turnips. For ourselves, we only had a few gallons of clear water left, and many things out of doors were fading and shrivelling without the chance in our power of greatly benefiting them. Now we may expect Peas, and Beans, and Lettuces, and Turnips, to be all right again—at least it will be some time before we can plead the excuse of dryness again, if anything should not be right or not be obtainable at all. After the first shower, feeling confident that more was coming, we gave a good soaking to Cauliflowers, Peas, Celery, &c., with sewage water, which would have been rather strong without the rains that were to follow. There can be no mistake as to the usefulness of much of the water that runs to waste from a gentleman's house. All the soap, greasy water, &c., that thus is often lost is most valuable when rightly applied and at the right time; and that time we hold to be when vegetables are growing freely. In hot summers nothing can be more suitable for Asparagus, Sea-kale, and all the rougher vegetables, only it must not be given too strong. "But why apply any at all when you saw that rain was coming?" A gentleman told us the other day, half derisively—"Why, F—, I am sure it will be rain, since you are watering." Well, the truth is we did not expect so much rain as we have had; and, again, we valued the sewage for root-watering even more than the rain; and, again, we find that all waterings are most effective that are given just before a good shower, or during the dull weather that generally precedes and follows a fair amount of downpouring. When plants in the ground, be they residents of the kitchen or the flower garden, are evidently suffering from want of water, it is right and proper to water them at any time; but the effects are very different when water is given in the forenoon of a sunny day, and in the afternoon when the atmosphere is quiet and clouded. In the one case, the moisture is evaporated almost as soon as given; in the other it is absorbed by and has time to pass through the whole of the plant. A summer shower very often merely refreshes the foliage and gives nothing to the root-absorbents. It is a capital thing that sunny shower after a hot day: it refreshes and invigorates; but the moisture is soon dissipated, and the roots are as dry if not drier than before, on account of the temporary obstruction to the moist vapour issuing from beneath. We know it is good for tender invalids to be placed in a medicinal bath, and thus to be fed through the pores of the skin; but we would have greater faith in a perfect recovery to health could the patient at the same time masticate some of the "roast beef of old England" and instead of being nervous or languid, be then the

man who waters the roots of a plant before a shower or in dull hazy weather, provided the plant wants it, is just exercising all the good common sense of practical philosophy.

Whilst on the subject of watering, allow us to say that the time of doing so is even more important in the case of flower gardens: hence, where practicable, as a general rule, from June to September it is best to water in the afternoon and evening. We have watered often in the morning, merely because we could manage to obtain water then and at no other time. In hot weather, however, we liked to keep it in the ground either by covering or loose-stirring the surface. But the chief reason for watering dry flower-beds before a shower is simply this: that if the roots are at all active, a heavy shower will fall on a gorgeous parterre and leave it in a few hours still more splendid; but if the roots are excessively dry, and the plants and flowers in a suffering state, there is every chance that the flowers will be knocked off and the beauty of the group be departed until fresh flowers are formed. The man who gives a little water at the roots, therefore, in such circumstances, when he sees something like a deluge coming, or even a good shower, is not so deficient in thought after all.

Put out more greens. The rains just suited seedling Lettuces, Cauliflowers, Turnips, &c., and were just suitable for planting out lots of Endives, Lettuces, &c., which it was no use attempting before. Gave the final earthing-up to some Celery. Scarlet Runners that had a good drenching are now all right and as crisp as possible. In the dryness the flowers refused to set, and the same as respects late Peas. Put out a few Leeks, as large ones are not desired; but to our taste they should be white as milk, as thick as our wrist, and then, well boiled and used with a little butter, pepper and salt, even an epicure might smack his lips over them. The rains have also helped to clear-off lots of caterpillars from Turnips and Greens; and we should have been much worse but for the thousands of butterflies that were struck down by the boys. Now also the Tomtits and other birds that annoy us not a little in the spring are doing good service. It is amusing to see the little fellows examine a trench from end to end. As soon as the ground is dryish on the surface will run the hoe through all openings to cut down the incipient weeds and keep moisture in the ground.

FRUIT GARDEN.

Kept thinning the fruit of dwarf Pear trees, and find that the pig is very fond of them, even in the hard state. Owing to the dryness everything in the shape of Greens, Lettuce stalks, Cauliflower stalks, &c., has been more than ordinarily agreeable to the pig. Went over the trees, finally shortening, disbudding, and thinning fruit where too numerous. The rains will help the fruit now as to swelling, and plenty of sun will be sure then to give flavour. The rains gave also just what was needed for Vine and Peach-house borders. In the case of the latter, where the fruit is wished to stand all the winter, the borders should be protected from heavy rains by the middle of next month. In the case of the early vinery where the wood is ripe it would be well to prune and remove the lights for a time. We think it a good plan for settling all insects. The same may be done to early Peach-houses, though they do well enough with roofs that cannot be removed. Still if they were well drenched with the rains of October, and had a little of the frost of November before being shut-up, a good many insects are likely to be punished. Without this help there must be more care in washing and cleaning. Thinned-out Currant shoots, as we needed them in the flower garden for our patent pegs, and will thin Raspberry shoots as we can find time. Clipped the Box-edgings in the kitchen and fruit gardens, not because it is the very best time, but because done now they will look well for a twelvemonth, whereas if done early in the season it would have required to be done twice. When strong and long established we have done it first-rate with the scythe, with or without a line down the middle; but our present edgings are better clipped with the shears. Vineries, Melon-pits, &c., much the same as preceding weeks.

ORNAMENTAL DEPARTMENT.

Changed plants in, and freshened-up the conservatory. Cut down a lot of Pelargoniums. Shifted many plants that they may be potted before winter; but the great work has

been propagating for the flower garden, and, after other things, going on with Variegated Geraniums, placing them thickly in portable boxes to avoid moving them until spring. These cuttings are about an inch long and will be placed in an airy place under glass. We will follow with the common Scarlets, and will merely take a batch of each kind and come over them again, as we do not wish to injure the outline of the beds for two months to come. These boxes average 3 feet in length, 9 inches wide, and 3½ inches deep, made of any boards we can lay our hands on. The boards are not planed, but are whitened, and the openings give sufficient drainage. About an inch of rough stuff goes over the bottom, then fresh sandy soil, and a sprinkling of sand on the surface. We must not speak of the future; but we shall be vexed if one per cent. of the cuttings made should bid us good-bye. After the trouble of putting them in, it is very annoying to see, first one, and then another, go off. Care must be taken to prevent this. A gardener told us the other day that he was once advised to carry home his cuttings, throw them out in the sun for a day, and then make and plant them. This may do with Scarlet Geraniums, though even with them we see little advantage in ever allowing them to shrivel; at least, it would not do any good with such little bits as we use. With respect to most plants the advice was equivalent to telling a man to take the cuttings home carefully, and then throw them on the rubbish-heap.—R. F.

TRADE CATALOGUES RECEIVED.

E. Parker, Exotic Nursery, Tooting.—*Catalogue of Stove, Greenhouse, and Hardy Plants, Hyacinths, and Bulbous Roots, &c.* 1863.

Charles Turner, Slough.—*Catalogue of Bulbous Flower Roots and Tulips, &c.* 1863-64.

COVENT GARDEN MARKET.—AUGUST 29.

The market continues very well stocked both with fruit and vegetables. Wall-fruit in particular is coming in in very great abundance. The supply of Grapes and Pine Apples is quite sufficient for the demand. Melons are plentiful. Filberts are bringing rather better prices in consequence of the supply falling off. Potatoes are still heavy. Flowers chiefly consist of Orchids, Pelargoniums, Verbenas, Asters, Calceolarias, and Mignonette.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....½ sieve	1	6	3	0	Nectarines.....doz.	1	0	4	0
Apricots.....doz.	2	6	0	0	Oranges.....100	10	0	14	0
Pigs.....doz.	2	6	3	6	Peaches.....doz.	3	0	8	0
Filberts & Nuts 100 lbs.	50	0	55	0	Pears.....doz.	0	0	0	0
Grapes, Hamburgs lb.	2	0	5	0	dessert.....½ sieve	3	6	6	0
Muscats.....lb.	3	0	6	0	Pine Apples.....lb.	3	6	6	0
Lemons.....100	12	0	16	0	Plums.....½ sieve	3	6	4	0
Melons.....each	1	6	3	6	Quinces.....bush.	0	0	0	0
Mulberries.....quart	0	6	0	9	Walnuts.....bush.	7	6	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad.....bush.	0	0	0	0	Leeks.....bunch	0	0	0	0
Kidney.....½ sieve	1	6	3	0	Lettuce.....score	1	0	1	6
Beet, red.....doz.	1	0	1	6	Mushrooms.....pottle	1	0	3	6
Broccoli.....bunch	0	0	0	0	Mustd. & Cress, punnet	0	2	0	3
Cabbage.....doz.	1	3	1	6	Onions.....bunch	0	4	0	0
Capicums.....100	0	0	0	0	pickling.....quart	0	6	0	0
Carrots.....bunch	0	6	0	8	Parsley.....bunch	0	3	0	4
Cauliflower.....doz.	3	0	4	0	Parsnips.....doz.	0	0	0	0
Celery.....bunch	1	6	2	0	Peas.....bush.	0	0	0	0
Cucumbers.....doz.	2	6	5	0	Potatoes.....sack	6	0	10	0
pickling.....doz.	0	8	1	0	Radishes doz. bunches	1	6	2	0
Endive.....score	1	6	2	6	Rhubarb.....bunch	0	0	0	0
Fennel.....bunch	0	0	0	0	Savoy.....per doz.	0	0	0	0
Garlic & Shallots, lb.	0	8	0	0	Sea-Kale.....bunch	0	0	0	0
Garlic & Pumpk., each	0	0	0	0	Spinach.....½ sieve	1	6	2	8
Herbs.....bunch	0	2	0	3	Tomatoes.....½ sieve	0	0	0	0
Horseradish.....bunch	1	6	4	0	Turnips.....bunch	0	4	0	6

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

We cannot reply privately to any communication unless under very special circumstances.

USE OF MOSS FOR DRAINAGE (B. F. M.).—Moss is probably not necessary to be placed over the potsherds in the course of potting plants. Anything will do for the purpose that will prevent the fine soil filling-up all the interstices between the crocks. Much depends upon what plants are being potted, whether the plant has to remain in the same pot a short time or a long time. If a long time we like a little moss; if a short time and growing quickly, as in potting-off Balsams in spring, or young Cucumbers, &c., it is no matter what is used. We cannot tell the name of the enclosed Fern. It is a seedling from some of the Laetrea family.

TERMANDEA VERTICILLATA CULTURE (E. W.).—It is described in most botanical and horticultural works as Tetratheca verticillata. It was discovered by Mr. Drummond at the Swan River, and was first flowered in this country by Messrs. Low, of the Clapton Nursery, in 1846. It is a charming greenhouse plant and easily grown. It requires plenty of root-room, and a soil composed of equal parts sandy fibrous loam and leaf mould well drained. It is propagated by cuttings of the young side shoots in sand under a bell-glass, air being admitted constantly to prevent damping. Be careful not to give too much water, or to pour it over the leaves.

VINES IN BOXES (Nottingham).—If we had a choice we should prefer boxes to pots, but Vines may be grown equally well in either. Rich turfy loam three parts, and one part thoroughly-decayed stable-manure will form a good compost. The Purple Constantia is as easy to cultivate in a warm vinery as any other variety.

PROPAGATION BY BEGONIA LEAVES (T. E.).—It is well known that Begonia leaves will emit roots and form plants: therefore it is not surprising that young plants have arisen from the bases of the leaves of four specimens of Begonias Rex, Victoria, and Marshallii.

LONICERA FRAGRANTISSIMA NOT FLOWERING (E. B.).—We can only account for your plant not flowering by supposing it to be on the shady side of a wall or to be shaded by some other object, or perhaps its roots were too wet to enable it to ripen its wood well enough the preceding autumn. Try a plant in a dry sunny place, and we expect it will flower if the other conditions be right.

COTONEASTER NUMMULARIA NOT FLOWERING (Idem).—The flowers of the Cotoneaster are so slightly ornamental to the plant that few would regret its not flowering, excepting for the fruit that follows. Perhaps your plant is in a shady or damp situation, both of which positions are inimical to the plant flowering well. Remove it to a dry sunny bank, and the probability is you will be rewarded by abundance of bloom.

WHITE LILIES AND PHLOXES NOT PROSPERING (M. F.).—It is seldom these two plants are both found good at the same place; the one liking a dry soil, the other requiring a deeper one and much more moisture. The Lilies in a damp place suffer from slugs; and we suspect they have injured the flowering bulbs, otherwise we have often enough seen patches of Lillium that have not been disturbed for many years, and yet continue to flower well. Plants of many of the herbaceous Phloxes are often ill-used in winter by having all the outside portions of the plant trimmed off, so as to make it, as the operator says, tidy-looking. Unfortunately, in so doing the best part of the plant is cut away, leaving only the centre or core, which flowers but indifferently. It is better practice, in the autumn or winter when the borders are dressed, to cut away all one side and as much of the middle as can be done, leaving the nice young portion of the other side, which flowers vigorously. The same remark holds good with Campanula and other things. Generally speaking, the Phlox likes a damp season rather than a wet situation; while on a dry place it suffers severely, the plant showing all the appearance of a potted plant languishing for want of water. Cuttings of Phlox taken from side shoots, and cut into lengths of two or three joints each, root freely in any sandy soil, but they ought to be taken off early and before the shoots have attained two-thirds of their growth.

BRUGMANIA ARBOREA FLOWERING DWARF (M. T.).—It is very seldom this species is met with flowering at the height you mention, neither do we think the mere fact of raising plants from the ripened wood of a former year will insure this object, as the flowers all proceed from the wood of the current season, and not, like those of Hydrangeas and some other plants, from the ripened and prepared bud of a preceding autumn. A free growth and full exposure to sunshine will in a general way insure flowers on plants under glass; and those planted outside will also flower well towards the end of a hot sunny summer, but they will not always do so in dull seasons or situations deficient of sunshine. We do not see any advantage in a pendulous-flowering plant like the Brugmansia blooming in so dwarf a condition, as the flowers will be too low to be examined or looked at with comfort.

APPLYING GUANO AND SUPERPHOSPHATE OF LIME TO GROWING CROPS (F. B. E.).—For hard-cropped garden ground half a ton per acre may be given of each during the year; but it ought to be given at three or four times—say 3 cwt. at the time of digging, and the remainder by surface-stirring during the summer. Most likely a second crop will be wanted, and of course an additional dressing will be wanted there again, but half a ton per acre per annum will be sufficient. Amongst the crops in summer these manures are best applied just prior to rain.

LATEST TIME AT WHICH IT IS SAFE TO PLANT STRAWBERRIES (Idem).—By taking off the runners in good time and planting them out on good ground, they may be taken up in October with good-sized balls and planted out in their final quarters; and if severe weather follow quickly on their planting-out, let some rough pea-haulm or dry straw be spread over them to prevent the frost from heaving them out of the ground. By taking them up with large balls we have removed them successfully at various times during the winter.

TWELVE GOOD VERBENAS (Sheffield).—Lord Raglan, Nemeas, Deademons, Lord Leigh, Lord Craven, L'Avenir de Bellant, Géant des Batailles, Chieftain, Ruby, Admiral Milford, Faust, and Fairest of the Fair.

EARLY-RIPENING MUSCAT GRAPES (G. H.).—A detailed answer to your note will be in next Tuesday's Journal.

PRESERVING LATE GRAPES (G. N.).—The best treatment you can adopt with the Vines the Grapes of which are now colouring, and which you wish to preserve through the winter, is to give them a little extra heat with air on, so as to have them ripe in September. They will hang better afterwards. Then keep excessive wet from the roots, as well as cold or frost. Keep the house airy day and night, and in dull cold weather put on gentle fires to enable you to do so, giving most fire during the day, and more especially if the weather is at all dull and foggy. In a very foggy day give little air. Be sure you keep out frost—very little will injure the Grapes and cause them to rot. Even without that it injures the flavour. Keep the floor, walls, &c., as dry as possible after the end of August. We think your early Grapes have kept very fairly. Very probably the shrivelling may be owing to excessive heat and dryness. Very likely if in these hot sunny days you had just damped the floors and paths a little, the Grapes would have been more plump. As it is, the moisture has been evaporated, and you have something like a first-rate Raisin—no bad thing in its way. In such hot weather we lessened air during the day, to prevent such excessive drying.

LIST OF AGRICULTURAL SHOWS (A Year's Subscriber).—In Mr. Cuthbert Johnson's "Farmer's Almanack" is a list of all the Societies and their Secretaries.

SIX HYACINTHS FOR EXHIBITION (A Notice).—Dark red, Robert Steiger; light ditto, La Dame du Lac; dark blue, Prince Albert; light ditto, Grande Vidette; white, Grandeur à Merveille; yellow, Soleil d'Or.

CUTTING-DOWN CYANOPELLEUM MAGNIFICUM (C. S. N.).—You may cut down this noble plant if you want it to come away with two or three stems from near the surface of the soil; but, in order to induce it to break kindly, you will require to plunge it in a bottom heat of 80°. We would much rather allow a plant about 2 feet high to grow on than cut it down or stop it, as, according to our ideas of the beautiful in this plant, it never looks so well as when brought away with a single stem and allowed to branch right and left, which it will generally do when about 3½ feet in height. With a leader and a few lateral growths it is much more handsome than when brought away with more stems. The loss of the bottom leaves arises from some check. We have had them drop when the plant has been exposed to a current of dry cold air, and when it has been left too long without a shift, or has been neglected in the matter of watering. It is a plant which thrives amazingly if watered with guano water. We have two splendid plants of it just now which have been grown on from last autumn's cuttings, and they are now beginning to branch without any stopping or pinching. We always prefer rapidly-grown plants of one year's growth to larger plants. There is a freshness and vigour about them which is not generally found in older plants which have stood a long time in the same pot.

FUNGUS IN TAN-PIT (Dorsetshire).—The fungus in your tan can readily be removed by rubbing it sharply with the hand on its first appearance; but a better plan is to take the parts infected away, there being no necessity to burn it, as it is perfectly harmless, though unsightly. We use cocoanut fibre, but have not been troubled with any fungus, though we have had Ferns in peat literally one mass of yellow froth or foam, which succumbed to a washing with water, care being taken to leave none of the yellow froth on the soil. By frequently rubbing and removing the froth—or, as botanists call it, "mycelium"—you need not fear any harm from this fungus; but if left to spread and remain until it becomes brown, the spores will fly about in all directions and vegetate whenever they find a substance in a state of decomposition to adhere to, accompanied by a close stagnant air.

PROPAGATING HARDY HEATHS (P. B.).—Hardy Heaths when young may be propagated by division, taking the parts away without shaking off any soil that may adhere to the roots. It should be done immediately after each species flowers. All Heaths are best propagated from cuttings, putting in the tips of the young shoots when the wood is about half ripe. The cuttings need not be more than from 1 to 3 inches in length. Put in as for any other description of cuttings in fine peat and silver sand in equal parts, scattering a little of the last between the cuttings; place in a cold frame, after which they must be gently watered and shut up quite close. Keep the sun off, but admit all the light possible, and give neither air nor water the next thirty days unless the soil is becoming dry, when it must be given even before it becomes dry. All that is required is to keep the soil moist, not wet, and the atmosphere close, but not stagnant. You may strike hardy Heaths under a bell-glass in a shady place, but free from drip; only put in cuttings of the half-ripened shoots. The plants themselves will tell you when this kind of work ought to be done, for Heaths flower at different periods, therefore we cannot give any particular time for taking cuttings. Heaths detest the knife, though unsightly growths may be removed; yet if hardy Heaths have room, they seldom need any pruning. Paul's "Rose Garden" will suit you.

LIFTING VINE ROOTS (A Constant Subscriber).—We prefer lifting the roots of Vines early in March; but, if the Vines have been forced, we should prefer lifting the roots in the autumn immediately after the leaves fall off.

AMERICAN BLIGHT (Idem).—Take equal quantities of unslacked lime and soot, and form them into the consistency of thick paint by a sufficiency of urine, and apply this hot (180°) to the trunks of your trees with a scrubbing-brush, rubbing it into every crevice. Scrubbing the trunks alone will rid them of moss, and brushing ammoniacal liquor from the gas-works into the parts infected with blight will free the trees of it.

DANDELION ON A LAWN (Idem).—Any time and all times are suitable for destroying Dandelions on lawns. It is a good plan to go over the lawn periodically and take up all the Dandelions with a long-bladed knife, cutting them off as much below the surface as possible. Persist in this, but on one season remove them as fast as they reappear, and towards autumn in wet weather drop a little salt into each hole after removing the Dandelion, and you will rarely see any more of them the season following. But bear in mind, if Dandelions are allowed to seed anywhere near your lawn, it will never be free from them, for the wind scatters the seed far and near.

UP FOR FRUIT TREES (Idem).—The leafy mud of your ditch, exposed to frost and mixed with unslacked lime, would not injure the soil of any garden; but as to its suiting your Peach trees we cannot say, as we do not know whether your soil is heavy or light. If it is strong or clayey it will be better than if it is light, the soil of a ditch being light will do it more.

HOLLYHOCK CUTTINGS (A Constant Reader).—If you refer to page 94 of our present Volume (No. 123) you will find the directions you require.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (B. E.).—It is a shrub—*Rhus cotinus*, or Venetian Samach. (A Fire-years Subscriber).—1, Not a *Spiraea*, but *Astilbe rivularis*; 2, *Galega officinalis alba*, the white Galingale; 3, *Geranium striatum*, Streaked Crane's-bill; 4, *Achillea rosea* gardeners call it, but it is *asplenifolia* of books; 5, *Achillea eupatorioides*, the Cuspidate Milfoil; 6, *Linaria peloria*, the regular-flowered variety of *Linaria vulgaris*—a curious and very rare plant. (H. B.).—1, *Adiantum hispidulum*; 2, *A. plenum fasciculatum* (1, too small a bit to be quite certain; 3, *Gymnogramma calomeleana*, sometimes called *G. peruviana*; 4, *Dioena ericoides*. (J. Bryan).—1, *Laetrea dilatata*; 2 and 3, *Polystichum*, forms of *aculeatum*; 4, *Laetrea oreopteris*; 5, *Laetrea Filix-mas*; 6, *Athyrium Filix-femina*, var. *incisum*. (C. F.).—1, *Salvia horminum*, var. *violacea*, or the Purple-topped Clary; 2, *Nepeta violacea*, violet-coloured Catmint.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CRYSTAL PALACE POULTRY SHOW.

THERE have been many inquiries why there has been no Show at the Crystal Palace, and when there would be one. We have given no answer for the best of reasons—we could not. We are, however, happy to say we have authority to announce that one will take place in October, about the middle of the month, we believe to begin on the 19th. This will be instead of the two Shows, and will doubtless prove an unusually large and good one. Many who can hardly make up their minds to show their chickens in August will willingly do so in October; birds are then in hard and good condition. We think Mr. Houghton has shown a wise discretion in choosing the midway between the two. The Chicken Show in August was too early for most classes, except Game and Dorkings, and yet it was too late to hope for much company from London. It took place when London was positively empty. The Winter Show clashed with Birmingham, and it suffered in consequence. It also took place when the Palace was a carpenter's shop preparing for Christmas revels. Spite of all these drawbacks, and the fact that only those who, like Bombastes, are "stout of heart and limb" dare face the deplorable railway arrangements, yet the Shows have been a success throughout. May we not then fairly expect numerous entries from our best yards in October? Lovely autumn weather, daylight, and the Palace in a fit state to receive company will help, we hope, to make the Show a real holiday to amateurs and a profit to the shareholders. We think it deserves support as the London Show, and it has strong claims on exhibitors from the punctuality which has always been one of its chief characteristics in every particular.

THE ISLINGTON AGRICULTURAL HALL POULTRY SHOW.

THIS Show of poultry has proved itself one of the most successful ever yet held in the great metropolis. It was appointed exclusively for young poultry of the present year, and consequently, the prize list being a most liberal one, a competition ensued very rarely known so early in the season. To poultry amateurs such a meeting had especial interests, as foreboding the probable strength of the yards of most of our reputed breeders. As being chickens novelty was universal, and few, if any, of the company assembled left without the spontaneous expression of approbation so good a collection richly deserved.

It is almost useless to make any remark whatever as to the eligibility of the Islington Agricultural Hall for the purpose of a poultry show—certainly it is not surpassed by any we have yet visited. On this occasion all the poultry was exhibited in the extensive gallery that surrounds the whole building. They were ranged entirely in single tier; not a dark pen could be pointed out anywhere, and all were alike conveniently placed breast-high.

In Spanish Mr. Rodbard took his customary position with a splendid pen; but in cockerels Mr. Lane obtained the mastery.

In the class for Grey Dorking chickens Vicountess Holmesdale exhibited a collection of which any amateur would indeed be proud. It must be borne in mind, that as being

exclusively a chicken show, not any of these excellent fowls had been before exhibited. The result was that their fair proprietor secured the first prize for single cockerels, first prize for pair of pullets, and a similar prize for the best cockerel and two pullets, besides minor premiums; this latter pen also obtaining the Silver Cup for the best pen of fowls of any breed in the Show. They were a most promising pen of chickens, possessing a great amount of bone, well-conditioned and well grown, the plumage being of the dark hue so well known among Dorking-fanciers as "Captain Hornby's colour." They were some of the most remarkably close-feathered Dorkings that have ever been shown, and from their youth will no doubt improve considerably ere they cease growing. The Rev. G. F. Hodson's White Dorkings were such as are only met with at long intervals.

In the Buff Cochins Mr. Kelleway entered a pen of the most unquestionably good chickens that have been shown for years past. These birds, being bred in so favourable a climate as the Isle of Wight, obtained an advantage that may not hold good at the Christmas shows. Be that as it may, they proved the much-coveted ones at the Islington Meeting. Mr. Stretch's pen of Partridge-coloured Cochins were of scarcely less merit; and the same remark applies with equal force to Mr. Dawson's pen of White ones. It is a rare occurrence that Mr. Chase has to play second to any one in this last-named variety, but in this instance he was completely distanced.

In *Brahmas*, Mrs. Fergusson Blair exhibited such a lovely pen that they ran in very closely for the Society's silver cup. When it is considered that this lady's birds travelled from Scotland to achieve their triumph, their success proves only the more meritorious. The pullets in the first-prize pen were of the most exquisite plumage imaginable. The third-prize pen shown by the same lady were, on the contrary, light-coloured ones, but of amazing growth. Mr. Fowler's second prize pen, in such a competition, it will be readily supposed was a very first-rate one to hold even that position.

Of *Game* fowls, undoubtedly the Black-breasted Reds were pre-eminent, Mr. Stubbs' pen being as perfect as any one can hope for; nor shall we be surprised to hear of their obtaining a long run of success this season if shown in the splendid condition and feather they just now possess. Mr. Fletcher, of Manchester, and Mr. Julian, of Beverley, were compelled to take subordinate positions on the prize list. In *Duckings*, the pen of Mr. Fletcher was unapproachable, although the Hon. W. W. Vernon's second and third prize pens were most excellent. Mr. Dawson's Black Game chickens foretell this well-known exhibitor has had a successful breeding season.

The *Hamburgh* classes, contrary to general expectation, were decidedly the weakest classes of the Show, the Gold-spangled being the only exception.

In *Polands*, the Show was excellent; they were such as only Messrs. Edwards, Dixon, and Adkins can exhibit, each variety being perfect.

In *Malays*, also, three such pens were scarcely ever before brought into competition.

In the Extra variety class were first, the best pen of *Silkie*s seen for many years, some perfect gems of the White-booted Bantams, capital Andalusians, and a most unique pen of *Polands*, absolutely "Piles,"—a colour never before exhibited. Mr. Bayley, of Biggleswade, appropriated nearly the whole of the Bantam prizes, taking both the first and second for each variety of Sebrights, also first and second for White ones, again first in *Game* Bantams, and the like for single *Game* Bantam cocks. This gentleman's yards of Bantams have evidently not been idle during the present summer.

Of *Ducks*, the Aylesbury were the best shown of any.

The *Geese* and *Turkeys* were triumphs of careful breeding, and do the greatest credit to their respective proprietors. Strange to say, that although very liberal premiums were offered for ornamental water fowl, only a single pen of *Spanish* *Geese* were entered. This, among general visitors, was the subject of much astonishment, it apparently being but little known that almost every description of our most beautiful fancy water fowls are at this season entirely out of feather.

The greatest care and attention was paid to the poultry,

and the Meeting was well supported throughout its continuance.

SILVER CUP FOR THE BEST PEN OF FOWLS IN THE SHOW.—Viscountess Holmesdale.

SPANISH.—First, J. R. Rodbard. Second, J. Clews. Third, S. Robson. Highly Commended, J. R. Rodbard. *Cocks.*—First, H. Lane. Second, J. R. Rodbard. Highly Commended, — Wright.

DORKINGS (Coloured).—First and Second, Viscountess Holmesdale. Third, W. Doloy. Fourth, E. Burton. Highly Commended, H. Lingwood; H. Elvidge. Commended, Viscountess Holmesdale; Rev. J. G. A. Baker; Mrs. F. Blair.

DORKING PULLETS.—First, Viscountess Holmesdale. Second, C. H. Wakefield. Highly Commended, Miss J. Milwood; J. Jardine; W. Dolby; Mrs. F. Blair.

DORKING (White).—First, Rev. G. F. Hodson. Second, H. Lingwood. Commended, Lady M. Legge; Mrs. M. A. Beardmore.

DORKING COCKS (Coloured and White).—First, Viscountess Holmesdale. Second, C. Preest. Third, Mrs. F. Blair. Commended, J. Smith.

COCHIN-CHINA (Cinnamon and Buff).—First, J. W. Kelleway. Second, Rev. C. Spencer. Third, G. Fell. Highly Commended, Mrs. T. Stretch. Commended, J. W. Kelleway; Rev. C. Spencer; Rev. C. Gilbert.

COCHIN-CHINA (Brown and Partridge-feathered).—First, T. Stretch. Second and Third, F. B. Walker. Highly Commended, C. H. Wakefield.

COCHIN-CHINA (White).—First, W. Dawson. Second, R. Chase. Highly Commended, R. M. Lord; W. Dawson.

COCHIN-CHINA COCKS (Coloured and White).—First, J. W. Kelleway. Second, C. Wakefield.

BRAHMA FOOTRA.—First and Third, Mrs. F. Blair. Second, J. K. Fowler. Commended, C. Preest. *Cocks.*—First, C. Preest. Second, W. L. Barclay. Commended, J. Hinton.

GAME (White and Piles).—First, H. Baker. Second, W. Burgess. Third, G. Crofts. Commended, H. Baker.

GAME (Black-breasted Reds).—First, J. Stubbs. Second, J. Fletcher. Third, H. M. Julian. Highly Commended, H. Adney; S. Mathews; H. Snowden.

GAME (Brown-breasted and other Reds, except Black-breasted).—First, H. Snowden. Second, J. Fletcher. Third, withheld.

GAME (Duckwing and other Greys and Blues).—First, J. Fletcher. Second and Third, Hon. W. W. Vernon.

GAME (Blacks and any other Variety).—First, W. Dawson. Second, Hon. W. W. Vernon.

GAME COCKS.—First, S. Mathews. Second, J. Fletcher. Third, J. Stubbs. Highly Commended, A. Heath.

HAMBURGH (Gold-pencilled).—First and Second, Mrs. A. Nuttall. Third, N. Barker.

HAMBURGH (Silver-pencilled).—First, H. Menhall. Second, C. Moore. Third, J. E. Powers.

HAMBURGH COCKS (Gold and Silver-pencilled).—First, withheld. Second, Rev. T. S. Fellows; J. E. Powers.

HAMBURGH (Gold-spangled).—First, J. Roe. Second, G. Brook. Third, — May. Highly Commended, G. Brook.

HAMBURGH (Silver-spangled).—First and Second, J. Fielding. Third, C. Pease.

HAMBURGH COCKS (Gold or Silver-spangled).—First, withheld. Second, Mrs. H. Sharpe.

POLISH (Black, with White Crest).—First and Second, T. Edwards.

POLISH (Gold).—First, J. Dixon. Second, W. Newsome.

POLISH (Silver).—First and Second, G. C. Adkins. Highly Commended, J. Hinton.

POLISH COCKS.—First, T. Edwards. Second, G. Adkins.

MALAY.—First and Second, A. Sykes. Highly Commended, J. J. Fox.

ANY OTHER DISTINCT BREED.—First, W. Bowly. Second, Rev. P. W. Storry. Third, C. Coles. Fourth, Mrs. F. Blair. Highly Commended, Mrs. Blair.

BANTAMS (Gold-laced).—First and Second, T. H. D. Bayley. Highly Commended, M. Leno, jun.

BANTAMS (Silver-laced).—First and Second, T. H. D. Bayley. Highly Commended, E. Jones. Commended, M. Leno, jun.

BANTAMS (White—Clean Legs).—First and Second, T. H. D. Bayley.

BANTAMS (Black—Clean Legs).—First, R. Brotherhood. Second, F. Pitt.

BANTAMS (Game).—First, T. H. D. Bayley. Second, J. W. Kelleway. Highly Commended, T. H. D. Bayley; J. Anderson; E. Brown. Commended, J. W. Kelleway; J. Anderson.

BANTAMS.—First, D. Causer. Second, T. Williams.

BANTAM COCKS.—First, T. H. D. Bayley. Second, J. W. Kelleway. Highly Commended, T. H. D. Bayley.

DUCKS (Aylesbury).—First and Second, J. K. Fowler. Highly Commended, P. A. Eagles. Commended, P. A. Eagles; Miss Whally.

DUCKS (Rouen).—First, T. R. Hulbert. Second, Mrs. F. Blair. Highly Commended, T. R. Hulbert; Mrs. F. Blair.

DUCKS (Black).—First, Mrs. M. A. Beardmore. Second, J. W. Prize.

GESE (White).—First and Second, J. K. Fowler.

GESE (Grey and Mottled).—First, W. Dolby. Second, Mrs. F. Blair. Highly Commended, Mrs. F. Blair.

TURKEYS.—First, J. Smith. Second, Rev. P. W. Storry.

ORNAMENTAL WATER FOWL.—Prize, Rev. P. W. Storry.

PIGEONS.

POWTERS OR CROPPERS (Any Colour).—First, R. Fulton. Second, T. Evans. Third, F. G. Stevens. Very Highly Commended, T. Evans; R. Fulton. *Hens.*—First, T. Evans. Second, R. Fulton. Third, F. G. Stevens. Highly Commended, T. Evans; R. Fulton. Commended, F. G. Stevens; C. T. Samuel.

CARRIERS (Black and Dun).—First and Second, F. G. Stevens. Third, F. Else. *Hens.*—First and Second, F. Else. Third, F. G. Stevens. Highly Commended, W. H. Edmonds. Commended, F. G. Stevens.

CARRIERS (Any other colour).—First, W. H. Edmonds. Second, J. L. Ord. Highly Commended, W. H. Edmonds. *Hens.*—First, J. S. Ord. Second, W. H. Edmonds.

DRAGONS.—Prize, F. Else; T. Equilant.

ALMOND TUMBLERS.—First and Second, F. Else. Third, H. Yardley.

MOTTLES (Short-faced).—First, F. White. Second, F. Else. Commended, H. Bunce.

BALDHEADS (Short-faced).—First, T. Esquilant. Second, J. Edge. Commended, F. G. Stevens.
BEARDS (Short-faced).—First, T. Esquilant. Second, J. Percivall.
TUMBLERS (Short-faced—Self Colour).—First, W. H. C. Oates. Second, J. Morris.
KITES, AGATES, DUNS, AND GRIEZLES.—Prize, J. Ford.
JACOBINES.—First, J. Morris. Second, F. G. Stevens. Commended, F. Else.
OWLS.—Prize, F. Else.
OWLS (Yellow, or any other Colour).—Prize, F. Else. Highly Commended, H. Yardley; J. Morris.
NUNS.—First, C. Bulpid. Second, F. Else. Commended, Rev. A. G. Brooke.
TURBITS.—First and Third, F. Else. Second, F. G. Stevens.
FANTAILS.—Prize, J. W. Edge.
FANTAILS (White).—Prize, H. Yardley. Highly Commended, F. Else. Commended, F. Key; J. Morris.
FANTAILS (Blue).—Prize, J. W. Edge.
BARBS.—Prize, F. G. Stevens.
BARBS (Yellow, or any other Colour).—Prize, F. G. Stevens.
MAGPIES.—First, J. Percivall. Second and Third, F. Else.
TRUMPETERS.—Prize, F. Else.
TRUMPETERS (White, or any other Colour).—Prize, F. G. Stevens. Highly Commended, F. Key; H. Yardley. Commended, Rev. A. G. Brooke; F. Else.
SPANISH AND LEHORN RUNTS.—First, F. G. Stevens. Second, T. D. Green. Highly Commended, T. D. Green.
FOR ANY NEW OR DESERVING VARIETY NOT BEFORE MENTIONED.—First, H. Yardley. Second, J. Percivall. Third, J. Ovens. Fourth, withheld.

RABBITS.

LONGEST EARS.—First, J. Cranch. Second, W. Griffin.
BLACK AND WHITE.—First, J. Haile. Second, R. Cook.
YELLOW AND WHITE.—First, Messrs. Hall & Co. Second, W. Griffin.
TORTOISESHELL.—First, J. Haile. Second, A. Steadman. Commended, J. Haile.
BLUE AND WHITE.—First, C. Sillen. Second, J. P. Miller. Commended, C. Sillen.
GREY AND WHITE.—First and Second, R. Cook. Commended, J. Haile.
SELF COLOUR.—First, C. Sillen. Second, G. Jones. Commended, J. G. Quick.
WEIGHT.—First, Mrs. F. Blair. Second, J. K. Fowler.
FOREIGN.—First, E. Terry. Second, F. S. Angel.
JUDGES.—Poultry.—Mr. Hewitt, Eden Cottage, Sparkbrook, Birmingham; Mr. James Monsey, Norwich. **Pigeons.**—Mr. Bellamy, London; Mr. D. Wolstenholme, London; Mr. W. B. Tegetmeier, Muswell Hill, London. **Rabbits.**—Mr. Terry, Lambeth; Mr. Lock, Walworth.

ADDLED EGGS—SEBRIGHT BANTAMS.

ON perusing my communication to your Journal as to chilling of eggs, I find an error which may lead your correspondents into the idea that the hen had been chilling her eggs with a vengeance. In page 156, line 13, instead of "I found one egg chilled," &c., read "I found one egg *chipped*," &c.

My last sitting of eggs for this season were due to-day (Sebright Bantams), all addled. Will any of your correspondents who keep this breed be kind enough to state if they have been alike unfortunate? I cannot help thinking there must be something peculiar in Sebright Bantams. Out of about sixty eggs I have only had, I think, six chickens; whereas the eggs from my other breeds have been this year most fertile.

The Bantam eggs were all from a cock and three hens (birds of 1862), and no other fowls kept with them.—**EVESHAM.**

LEICESTERSHIRE AND WALTHAM POULTRY EXHIBITION.

THIS Show is held conjointly with a show of cattle, horses, cheese, and roots. The flowers exhibited this year also were of great merit, all which combined drew together an unusual attendance. The Leicester and Waltham Poultry Show, however, this year laboured under extraordinary disadvantages, for not only were the Pocklington, the Halifax and Calder Vale, and one or two minor Shows held simultaneously with it; but a still more unfavourable drawback was the fact, that the great Poultry Show at the London Agricultural Hall was also carried out at the same date. This latter Society offering the most liberal premiums, of course enticed many an exhibitor to try his luck at Islington who otherwise might have been found competing at the Leicester and Waltham Poultry Show.

Jesides pecuniary benefit, it is but an almost universal trait of human nature to prefer the honour of success at the agricultural exhibition, and to value prizes proportionately to

the absolute difficulties that stand in the way of its attainment. Feelings of this character no doubt prevented many an entry for Leicester that under other circumstances would not have been wanting. In fact, we know some classes were very materially lessened from this sole reason.

The *Spanish* class of old birds was a weak one, every pen being somewhat faulty, and condition was wanting throughout. One exhibitor most strangely (if expectant of success), absolutely penned a rosy-combed hen in this competition. The class for young *Spanish* fowls consisted of but two pens, but both of these deserve very favourable mention.

The class for old *Grey Dorkings* was indifferent, none taking even a commendation, save the two winning pens. The *Grey Dorking* chicken class proved one of the most extraordinary "mixed medleys" that ever was placed before any arbitrator. Perfectly bright yellow legs that would have given a positive blaze of success attached to a pen of *Malays* or *Cochins*, here glittered unavailingly; whilst the additional *Dorking-toe* was evidently eschewed altogether by another competitor as "quite unnecessary, as he said the development only encumbered the fowl and hindered it when walking." The *Silver Grey Dorkings* were so very faulty in colour in both the classes, that half the prizes were withheld. One pen contained a very unusual specimen—viz., a cock so well booted and leg-feathered, that it would have caused even a *Brahma Pootra* for the future to foreswear all leg-coverings. The *White Dorkings* were really good, although the chicken class was very select as to the number of entries.

The adult *Cochins* were inferior, but the first-prize chickens (*Partridge-coloured* ones), were particularly good. In this class an "old hen" was attempted to be palmed off for a chicken—of course, leading to immediate disqualification by the Judges. The *White Cochins* should never be shown with green-tinged legs, the objection to which is always fatal to success. This we mention, as evidently many otherwise good pens were thrown out completely through want of care on this point alone.

The *Duckwings* were the best shown of the *Game* fowls, though the first-prize *Black Reds* would have been thought much of if shown in condition.

The *Hamburghs* were few in numbers. In *Golden-spangled* a well-deserved first prize was allotted; but, strange to say, some half-bred *Malays*, and again a pen of actually "laced" (not "spangled" at all) birds, were entered. In the *Pencilled* ones matters were far better. In the commended pen of *Gold-pencilled* chickens were exhibited the best cockerel and pullet, by far, we have seen this year, but mated to a second pullet so indifferent, that the spit would be the most suitable position of any for her future appearance. Some good *Silver-spangled* were shown. In both the *Silver-pencilled* *Hamburgh* classes the prizes were withheld, save one second. They were the two worst classes we ever saw of this breed.

Although not a *Sebright Bantam* was present, the *Black* and the *Game Bantams* were well shown.

Many of the *Aylesbury Ducks* were faulty in the bills—a shortcoming quite incapable of compromise. As good *Rouen Ducks* were shown as could be desired; in fact they would have added to the credit of our most popular meetings.

In *Geese*, the competition was strong; but we much fear a disregard to the sexes shown pervaded at the least one pen.

In *Turkeys*, the *Cambridge* breed took highest place, and capital *Norfolks* second.

Golden and *Silver Chinese Pheasants*, for which special prizes were given, mustered in numbers, and they were exceedingly well shown.

The *Pigeon* classes, as a whole, were very meritorious; and among the *Rabbits* was one of the best *Greys* we have seen for years past.

The accommodation of the poultry was most amply provided for by the Committee, the tent being spacious and airy.

SPANISH.—First, M. Brown, Ab Kettleby. Second, J. W. Argyle, Leicester. **CHICKENS.**—First and Second, M. Brown.

DORKINGS (Coloured).—First, J. Smith. Second, A. Guy, Eaton. **CHICKENS.**—First, B. Everard, Barton Hill House. Second, J. Sheffield, Reddington Grange.

PARTRIDGE (Silver-Grey). Second, Sir A. G. Herlert, Nossley Hall.

First, Withheld. Chickens.—First, R. Dutton Miles, Keyham. Second, Withheld.

DORKINGS (White).—First, R. D. Miles, Keyham. Second, Capt. Buckley, Desford. **Chickens.**—Prize, R. D. Miles, Keyham.

COCHIN-CHINA (Coloured).—First and Second, H. C. Woodcock, Reasby. **Chickens.**—First, A. Guy, Eaton. Second, H. C. Woodcock, Reasby.

COCHIN-CHINA (White).—Second, H. E. Emberlin, Humberstone. **First, Withheld. Chickens.**—First and Second, T. Sheppard, Humberstone.

GAME (White Piles and Light Colours).—First, H. W. White, Leicester. Second, G. Cooper, Seagrave. **Chickens.**—First, B. Everard, Bardon Hill House. Second, A. Guy, Eaton.

GAME (Red and other dark colours).—Second, B. Everard, Bardon Hill House. First and Third, Withheld. **Chickens.**—First, B. Everard. Second, Sir W. De Capel Brooke.

HAMBUROHS (Golden-spangled).—First, H. E. Emberlin, Humberstone. Second, Withheld. **Chickens.**—First, H. E. Emberlin. Second, Captain Buckley, Desford.

HAMBUROHS (Golden-pencilled).—First, Captain Buckley, Desford. Second, J. Jacques, Birstall Hill House. **Chickens.**—First, A. Houghton, Asfordby. Second, T. H. Pares, Kirby Frith. Highly Commended, Captain Buckley. Commended, T. H. Pares.

HAMBUROHS (Silver-spangled).—First, W. Exton, Narborough. Second, R. D. Miles, Keyham. **Chickens.**—Prize, Captain Buckley, Desford.

HAMBUROHS (Silver-pencilled).—Prizes withheld. **Chickens.**—Prize, T. Charlesworth, Leicester.

BANTAMS (Game).—First and Second, H. C. Woodcock, Reasby.

BANTAMS (Black).—First, J. Goodyear, Cawthorpe. Second, Withheld.

DORKING COCK (Any colour).—Prize, J. Smith.

DUCKS (White Aylesbury).—First, H. E. Emberlin, Humberstone. Second, W. Carver, Ingarsby. Highly Commended, W. Carver. Commended, H. E. Emberlin.

DUCKS (Any other variety).—First, T. Burnaby, Pipewell (Rouen). Second, S. Pool, Thorpe Arnold Lodge, near Melton (Albridge). Highly Commended, T. Burnaby (Rouen). Commended, H. Wilson, Broughton Astley; H. L. Powys-Keck, Stoughton Grange.

GREYS.—First, W. Kirk, Wymondham (Toulouse). Second, W. Winterton, Wolsey Villa.

TURKEYS.—First, A. Guy, Eaton (Cambridge). Second, H. L. Powys-Keck, Stoughton Grange.

PHEASANTS (Golden).—Prize, S. Lennard, Leicester. Highly Commended, R. D. Miles, Keyham.

PHEASANTS (Silver).—First, R. D. Miles, Keyham. Highly Commended, S. Lennard, Leicester. Commended, J. Buck, Leicester.

PIGEONS.—Pouters (White).—Prize, J. Langham, Belgrave. **Pouters (Any other colour).**—Prize, Rev. R. W. Fisher, Alton Cheadle. Commended, Rev. R. W. Fisher. **Carriers (White).**—Prize, H. E. Emberlin, Humberstone. Highly Commended, H. E. Emberlin. **Carriers (Any other colour).**—Prize, J. Langham, Belgrave. Commended, H. E. Emberlin; J. Langham. **Tumblers.**—Prize, Rev. R. W. Fisher. Commended, J. W. Argyle, Leicester. **Pantails.**—Prize, H. E. Emberlin. Commended, J. Langham. **Turbits.**—Prize, J. Langham. **Turbits (Red).**—Prize, H. E. Emberlin.

RABBITS.—Heaviest Weight.—Prize, J. N. Dixon, Leicester. **Greatest Length of Ear.**—Prize, J. N. Dixon. **Any other kind.**—Prize, W. Chamberlain, Desford.

The Judges appointed were Mr. W. Dolby, of Horse Grove, Rotherfield, Tonbridge Wells; and Mr. Edward Hewitt, of Sparkbrook, near Birmingham.

FOWLS AT NIGHT.

FOWLS that have been allowed to roost out may continue to do so; and the first alteration in the weather, the feeling of freshness consequent on rainfall and on the diminishing hours of sunshine, need not lead to any change of management. With the head tucked under the wing, the body drawn into its smallest compass, the feathers so compact and close that nothing can penetrate, perching on one bough of a tree and under another, we believe a healthy fowl can bear any amount of rain, not only without injury, but almost without feeling it—certainly without any other than the outer feathers being wetted.

Out-door roosting has many advantages: during summer and autumn it is certainly healthier for them; they are less subject to vermin; they grow faster, and are stronger than those that are more cared for. Yet it is now well, so far as it can be done, to draw them by degrees nearer and nearer to the place where they will roost during the winter. When nights are long and cold, and foxes are dispersed about the country, it is desirable they should be sheltered at night. We cannot forget the scene that met us one fine winter's morning. All the best fowls of one yard were slaughtered and laid about, and the road to the fox's kennel was marked by here a White Cochins, there a Buff, and then a Spanish, next a Bantam.

While on the subject of depredators, we can corroborate that which is said by one of our correspondents about hedgehogs. We put a few early chickens in a sheltered orchard. There were four hens with good broods. One or two chickens disappeared every night without our being able to tell how. There was a scream and a commotion, yet, before we got there, all was still, save that the hens

were muttering. We determined to watch; after a time the chickens rushed out, the hen fought for a moment, and then, screaming, tried to escape. We ran to the coop and turned a strong light upon it. The whole affair had lasted but a minute, but there lay two chickens dying, both bitten through the neck, and the assassin, in the shape of a hedgehog, lying rolled up. We killed him and lost no more chickens. He had taken nine.

POCKLINGTON POULTRY SHOW.

THIS Show was held on Tuesday, August 25th. The following is the list of the awards:—

SPANISH.—First and Second, Miss E. Beldon, Gilstead, Bingley. **Chickens.**—First, H. A. Hudson. Second, J. Reynolds, Southcliffe. (Very good class)

DORKINGS.—First, E. Smith, Middleton, Manchester. Second, Miss E. Beldon, Gilstead, Bingley. **Chickens.**—First, O. A. Young. Second, Eldridge, Bishop Wilton. (Poor except the first-prize pen).

COCHIN-CHINA (Buff, Lemon, or Cinnamon).—First, H. & G. Newton, Garforth, Leeds. Second, E. Smith. Commended, C. T. Bishop, Lenton, Nottingham; H. & G. Newton; R. Clark, South Dalton.

COCHIN-CHINA (Any other variety).—Prize, R. White, Bromhall Park. **Chickens.**—First, H. & G. Newton. Second, J. Appleton, Pocklington. (This class was one of the best in the Show).

GAME (Black-breasted and other Reds).—First, H. Adams, Beverley. Second, Miss E. Beldon. Highly Commended, H. Adams.

GAME (Duckwing and other Greys).—First, H. Adams. Second, A. Catley, York.

GAME (Any other variety).—First and Second, H. Adams. **Chickens.**—First, H. Adams (Piles). Second, J. Reannon.

HAMBUROHS (Silver-spangled).—First, S. Campling, Cottingham. Second, Miss E. Beldon.

HAMBUROHS (Golden-spangled).—First, Miss E. Beldon. Second, G. Holmes, Driffield.

HAMBUROHS (Silver-pencilled).—First, Miss E. Beldon. Second, O. A. Young.

HAMBUROHS (Golden-pencilled).—First, Miss E. Beldon. Second, O. A. Young. **Chickens.**—First, H. A. Hudson. Second, O. A. Young.

POLANDS.—First, Miss E. Beldon. Second, O. A. Young.

BANTAMS (Game).—First, G. Holmes. Second, R. M. Stark, Hull.

BANTAMS (Any other variety).—First, Miss E. Beldon. Second, R. M. Stark.

GREYS.—First, O. A. Young. Second, Mrs. Croft, Pluckham.

DUCKS (Aylesbury).—First, R. M. Stark. Second, O. A. Young.

DUCKS (Any other variety).—First, R. M. Stark. Second, J. Braim, Pickering. Highly Commended, J. R. Jessop.

TURKEYS.—First and Second, Mrs. W. Rickell, Warter Wold.

GUINNA FOWLS.—First, O. A. Young. Second, W. Dorsey, Warter.

SINGLE COCKS.

GAME.—First, H. Adams. Second, J. R. Kennison.

SPANISH.—First, Miss E. Beldon. Second, S. Robson.

DORKING.—First, R. M. Stark. Second, O. A. Young.

COCHIN-CHINA.—First, R. White, Broomhall Park. Second, O. A. Young.

HAMBUROHS.—First, Miss E. Beldon. Second, O. A. Young.

BANTAM.—First, Miss E. Beldon. Second, W. Gilton.

PIGEONS.—Pouters or Croppers.—First, S. Robson. Second, Miss E. Beldon. **Tumblers.**—First, Miss E. Beldon. Second, J. W. Edge, Birmingham. Highly Commended, H. Yardley. **Barbs.**—First, Miss E. Beldon. Second, H. Yardley. Highly Commended, T. Ellington, Woodmansey. **Jacobins.**—Prize, G. Spiok. **Pantails.**—First, Miss E. Beldon. Second, J. W. Edge. Highly Commended, W. Carlton, Howden; T. Ellington. **Trumpeters.**—First, S. Robson. Second, Miss E. Beldon. Commended, W. Carlton. **Owls.**—First, Miss E. Beldon. Second, J. W. Edge. **Turbits.**—First, H. Yardley. Second, J. R. Jessop. **Carriers.**—First, S. Robson. Second, H. Yardley. **Any other variety.**—First, Miss E. Beldon. Second, J. W. Edge.

CAKE BIRDS.—Belgian Canary.—First, Miss Small, Howden. Second, J. Moore. **Marked Canary.**—First, Blacker. Second, G. Harrison. **Pair of Canaries.**—First, Miss Small. Second, G. Harrison. **Canary (Any other variety).**—First, J. Baines. Second, W. Carlton. **Mule.**—First, G. Harrison. Second, R. Harrison. **Redcap.**—First and Second, W. Carlton.

EXTRA STOCK.—Mrs. W. Rickell (White Geese). — Swallow, Nunburnholme (White Robins).

The Judges were Mr. John Crossland, Jun., Wakefield, and Mr. George Jackson, York.

AGE OF QUEENS—EFFECTS OF FUMIGATION.

I REGRET that I am unable to furnish "A HAMPSHIRE BEE-KEEPER" with any positive information regarding the longevity of the queen bee. Although a tolerably close observer of apian facts since 1840, when I first kept bees, my career as a strictly scientific apian dates only from the introduction of the Ligurians in 1859. Since that time I have been, so to speak, on visiting terms with every queen in my apiary, know the age, and can describe every peculiarity in the personal appearance of each; but, unfortunately, accidents to queens in leading off swarms, and regicides committed by their subjects, have thus far frustrated all my endeavours to obtain accurate information on the point in question. The senior queen in my apiary is now two years

old, and certainly shows no signs of decrepitude, but I have a strong impression that "A LANARKSHIRE BEE-KEEPER" has been deceived by an accidental resemblance between two successive monarchs, and that he is, therefore, mistaken in believing that a queen has survived and remained fertile during seven years.

Would Mr. Lowe be kind enough to favour us with the desired information? In the autumn of last year he forwarded to me a couple of living queens for microscopic examination. One of these he informed me had ceased laying altogether, whilst the other, having returned to the drone-laying condition of a virgin, afforded the strongest possible confirmation of the truth of parthenogenesis.* If Mr. Lowe will oblige us by stating the age of these queens it will at once decide the question.

My suspicions as to the injurious effects upon bees of stupefaction by means of fungus were first aroused by finding that a repetition of the operation a few days afterwards was always fatal, proving that the bees must have been in some way weakened by the first fumigation, although they appeared at the time to have perfectly recovered from it. When I afterwards found that colonies of bees expelled from their hives in this manner, and furnished with combs and plenty of food, invariably dwindled away, my impression became confirmed, and I spared no pains until I had mastered the art of driving, which renders fumigation unnecessary, and is free from all objection.

I have never found bees slaughtered on their return from a removed super, and should suspect some error in management were such an occurrence to take place.

I have to thank "A HAMPSHIRE BEE-KEEPER" for his kind sympathy. The good of others was the sole object I had in view when I made my misfortune public, and "A HAMPSHIRE BEE-KEEPER" administers the best consolation when he declares that he has already benefited by the warning given by—A DEVONSHIRE BEE-KEEPER.

HONEYDEWS—FOUL BROOD.

COLONEL NEWMAN in his last communication spoke of honeydews being abundant this year, leading us to infer that his bees, or the bees generally in the neighbourhood of Cheltenham, had profited by them to the filling of their honeycombs. May I ask the gallant Colonel if he actually saw the bees collecting those dewdrops in such numbers as to warrant him in believing that any considerable quantity of this exudation or excretion was actually stored up as honey by the bees? Also I should be glad to know what trees the bees frequented in search of it. Only once in my life have I had ocular demonstration to the fact of bees sipping this honeydew; nor have I met with any apianian or naturalist who had more experience than myself. Some ten or eleven years ago I put the question in the pages of THE COTTAGE GARDENER, and, so far as I can remember, I myself was the only person who had seen bees apparently collecting the honeydew, although more than one writer stoutly asserted the fact that they do collect it. I must profess myself to be still incredulous with regard to these dewdrops, so far at least that bees make any use of them in ordinary years. In bad seasons, when bees are starving, they will feed upon anything sweet which is not offensive to them; but I doubt whether they will touch honeydew when anything else in the shape of food is to be had by them, and it remains a question if they store it in their hives. If this be correct, bee-writers generally have copied from each other a mere tradition, when they speak so bravely about the extraordinary activity of bees during the prevalence of honeydew.

As to the other question of foul brood now being discussed in your pages, I feel strongly persuaded that Mr. Woodbury has fully made out his case as to this being a disease of a distinct type. Here are no "mere surmises or conjectures"

—no mere "accepting for truths the dicta of others," but acts very patent, and proofs, as they appear to me, very satisfactory. Like Mr. Edwards (who by the way writes like a man who is thoroughly up to the scientific and profitable management of bees), "I have had more or less of killed brood under various circumstances," and no check to

the bees has resulted from it, the bees quietly clearing out their cells, but generally I have had also such brood become corrupted in the hive, and the bees nevertheless, if sufficiently populous, have thriven in spite of it; but nothing like the disastrous experience of Mr. Woodbury has come under my notice hitherto. Here is a case of hive after hive in various conditions catching the infection till an entire apiary is hastening to destruction. Not only so, new hives, fresh and well peopled, are brought from a distance, and they, too, are attacked. The virulence of the disease is also remarkable, and the rapidity with which the evil spreads. Mr. Lowe seems to forget that Mr. Woodbury has been for several, I may say for many, years an experimental apianian (all thanks to him for it), and repeating again and again the very ingenious and admirable process to which Mr. Lowe so strongly excepts; but nothing like this disease has ever come across him before. I must add that in the interests of our favourite pursuit, the tone and style of Mr. Lowe's recent communication are in my poor opinion much to be regretted. I asked myself directly I read it, What personal disagreement can have arisen between the two gentlemen to account for this philippic?—B. & W.

REMOVING BEES TO THE HEATHER.

SINCE you published my directions for removing bees to the moors in THE JOURNAL OF HORTICULTURE of July 21st, I have had several letters, showing how carefully my instructions should be carried out to prevent the combs in swarms breaking down and drowning the bees in their own honey. And as my object is to preserve the lives of these useful interesting little creatures, as well as to encourage bee-keepers by showing them how to make a good profit out of their bees, I think I cannot do better than give them the correspondence I have had with a Lincolnshire bee-keeper, which clearly shows how easy it is to remove swarms even with combs only partly made, if my instructions are strictly carried out.

"MR. CARR,

"Lincolnshire, July 29th.

"Dear Sir,—Previous to seeing your instructions in the paper, how to remove bees to the heather, I had removed thirteen swarms to the moors, and the combs broke down in several of them, and the bees were all drowned in their own sweets, and were totally destroyed. The plan I pursued was, to take the hives gently off the stands, and tie them up in a thin piece of calico, and they were conveyed very steadily to the moors. But you appear to prefer carrying them turned upside down. My bees are in flat-topped straw hives. I should esteem it a great favour if you will drop me a line with some further instructions, as I want to take about twenty more hives to the heather. Yours, &c."

In reply I said—

"I am sorry you have had the misfortune to lose some of your hives of bees, as it is very discouraging. The new combs, especially in late swarms, are as brittle as glass, and break down with the least shake when heated, and even fall with their own weight if they have any honey in them, as the bees when made up with the finest calico grow excited, and the heat ascending to the top of the hive soon heats the comb and they give way.

"But I think if you will follow my directions, you will meet with no further accidents, as I have taken my bees to the moors for many years, part of the way by the railway, and then six miles over a very rough country, on and suspended under a carriage, and I took them again last Saturday without any accident.

"Fasten your bees, especially your swarms, in a cover of very open net (strong cap-net will do), with holes in it just small enough to prevent the bees escaping, and when tied securely turn the hive gently up, but mind that the edges of the combs are at the bottom part as you turn the hive over, otherwise the combs will probably either bend or break with their own weight and that of the bees upon them. When turned bottom upwards, the combs all rest upon their own foundation, and the heat always ascends, and so escapes through the net, and the inside of the hive is kept cool. Swarms always ride the best suspended. With old hives the same amount of care is not necessary, as the bees varnish their combs with a sort of glue, and when they have had brood

*The result of my examination is related in page 544 of the third vol. of THE JOURNAL OF HORTICULTURE.

in the combs, the cocoon left in the cells again strengthens them, so that they become nearly as tough as leather, and you can knock them about as you like, provided you give them plenty of air.

"It will be a gratification to me to hear that I have been the means of saving you your property, and the lives of the poor bees, and am, &c.—WM. CARR, *Clayton Bridge Apiary, near Manchester.*"

"MR. CARR.

"Lincolnshire, August 13th.

"Dear Sir,—It is impossible for me to return you sufficient thanks for your information about taking my bees to the heather. I purchased some strong cap-net and conveyed my bees as you directed, and I had not a single accident, and they all arrived safely at the moors. I had some of them suspended, and others put on some straw in a light cart, and the pony trotted very quickly for about five miles over a very rough road, and as you said, the hives were kept cool, and there was not a single comb damaged in any of the swarms whatever. If you should at any time be so unfortunate as to lose your bees, I shall have great pleasure in presenting you with a new stock, and am, &c."

FOUL BROOD—WOODEN HIVES.

BEING a victim of this greatest of all plagues to the apiarian, and consequently desirous of knowing as much as possible respecting it, I have been subjecting portions of the infected combs to microscopic examination, and the result is that I am led to believe that whatever may be the anterior cause, the disease itself is the result of the action and presence of fungi. I have found in the bottoms and sometimes on the walls of the cells minute whitish spots, irregularly distributed and of various sizes, the largest not more than 2 lines in diameter, and which on being viewed under various magnifying powers of from 200 to 600 diameters, present the appearance of waxy circles composed of globular particles, and reminding one in appearance of the white cloud cumuli, sometimes visible in bright but stormy weather. In the most highly developed specimens these rings of globules seem to leave the interior space quite vacant, while in those of smaller size the masses appear more or less solid. This I take to be a fungus; and both its appearance and effects seem to me in unison with those of fungi generally, and I should be very glad to know the ideas of more experienced apiarians on the matter, believing that a correct apprehension of the nature of the disease will go very far towards suggesting remedial and curative measures. The subtle nature of the spores of fungi is well known, and the globular development is also very common in many classes of these pseudo-vegetables. The circular distribution is a feature conspicuous in some fungi, and their absorption of oxygen and distribution of carbon may well be supposed to be highly detrimental to animal life, especially in so confined an atmosphere as the interior of a hive. It may be that this is not sufficient to destroy the vital powers of fully-developed bees perpetually passing into fresh air; but when it is at work in so confined a space as the sealed cell of the bee-crysalis, it may be sufficient to prevent further growth, and thereby produce "abortive brood."

Fungi are thought by some physiologists to be capable of being evolved from animal or vegetable decomposition. Is it not possible, therefore, that chilled brood in the process of putrefaction may some time or other have produced the fungus? Once produced, its dissemination on my hypothesis of its nature is but a matter of course. That the disease is infectious no one who has been unfortunate enough to have any experience of it can doubt, and this may easily arise from the diffusion of the spores by means of the bodies of bees in passing from hive to hive.

I think Mr. Woodbury has been unjustly suspected by Mr. Lowe and others of having produced the disease by over-experimenting. It has occurred with me in two swarms of black bees that came off naturally, and neither parent hives nor progeny had ever been the subjects of the mildest inspection or process. I attribute their failure to their proximity to the Ligurian hive received from Exeter in the spring, whose diminished numbers and activity rendered it an easy prey to marauders of any description, and some of

which pirates, doubtless, were denizens of the two swarms that subsequently became victims.

I should like to corroborate the opinion of "A LANARSHIRE BEE-KEEPER" as to the superiority of wooden hives. Like him, I have for some years had both kinds in use. The wooden ones, being home-made, are quite innocent of any virtues commonly deemed necessary, excepting strength, and I never yet had a casualty with them, though exposed to all weathers, which is more than I can say of some of my straw hives, whether protected or exposed. It seems to me that success in bee-keeping depends on something not affected either by shape or material of hives.—G. F. B., *Spalding.*

BEE-KEEPERS OF THE OLD SCHOOL—FOUL BROOD.

WHILE I do not doubt the sincerity of the sympathy manifested by your correspondents towards Mr. Woodbury in his difficulties with foul brood in his apiary, still I cannot help thinking that some of the old-school apiarians—those who are averse to all changes—are like many of those who, witnessing the first ship propelled by steam, declared, with a knowing shake of the head, that it would "never do," was "contrary to custom," and "against nature." Why, it went in spite of adverse winds; and notwithstanding the ships did make voyages to other countries and back, they would fail some day. And how these people would chuckle over the first disaster which occurred to the said ship! sorrowing, I have no doubt, for the sufferers, but pleased at the same time that their pet notions had been verified by the (to them) apparent failure. It was the same with Harvey when he announced his theory of the circulation of the blood; the same with Dr. Jenner when he declared vaccination to be a remedy for smallpox, because it was "against nature." And it was not the ignorant, but the learned as well, who joined in the cry against all improvements. Whether based on sound principles or not, it was all the same to them—it interfered with their preconceived notions of what was "against nature."

And it appears to be the same now to all those who attempt to go beyond the beaten track, as in the case of Mr. Woodbury—one who has always been willing to lend a helping hand or give advice to any who asked for it concerning their apiaries; but as soon as he has a failure in his own apiary, and asks for advice, he has a host of critics about his ears, telling him it is all owing to his own management—he is all against "nature"—he uses too much science to accomplish his ends—he will not let well-doing alone. He may well exclaim, "Save me from my friends!"

When he asks for intelligent assistance, he is told by Jonas Jackson that he ought not to overlook what the people do in Cheshire, "not to neglect telling his bees that a relation or friend has ceased to live," and such nonsense. But surely Jonas Jackson is joking when he asks him to perform such absurdities. I pity the darkness of mind which must possess the people of Cheshire if they believe in such mummeries; and I would rather believe that Jonas Jackson has drawn the picture a little too strong, that he may enjoy the pleasure of the idea that non-interference with the bees is still the best plan.

And even my friend Mr. Lowe cannot resist giving Mr. Woodbury a poke in the side, attributing all his failures to excessive meddling with the natural habits of his bees, and doubts that it is really a disease with which Mr. Woodbury is troubled in his apiary.

I will now relate a few cases of foul brood—not in my own apiary, as I am happy to say I never had it, but in that of a neighbour who lives about a quarter of a mile from this, and whose troubles with foul brood I have been a witness to for eight years back; and during all that time, until I saw Mr. Woodbury's first article on the subject, like Mr. Lowe I believed it to be caused by a chill to the young brood. My neighbour, however, would never admit it, having tried plan after plan to get clear of it, and all had failed. He has kept bees upwards of thirty years, has paid great attention to them, has read few works (if any) on the subject, and is, perhaps, the best manipulator of bees to be found. All bees seem to know him—at least, they do not sting him as they do others; and we have dubbed him Professor on account of

his knowledge of bees and their habits, and he would rather take a lot of bees than a hen in his hands. I am compelled, therefore, to give his experience on foul brood, as it bears much against Mr. Lowe and his theory, and may be useful to bee-keepers.

1st. It is now eighteen years since he had a fresh stock-swarm from me, and ten years ago since he saw the first symptoms of foul brood. Eight years ago he had a stock swarm from me in the spring, which gave off a top swarm in June, and put it into a hive of his own which had died that spring, but previously cutting out every part of the comb affected, leaving nothing but honeycomb in the top. The swarm did well enough, to all appearance, till the autumn. On examining it he found all the young combs affected like the old stock. Having lost his young queen, and having another of his own which had foul brood, with a super on it partly filled with honey, but no brood, he drove all the bees and queen into the super, and put it on the top of the old and clean stock which he had from me, and the result was again foul brood in the autumn.

2nd. In the following spring he bought a stock-hive from a neighbour who lived half a mile from him. It, likewise, was affected with the disease. Since then he has bought other three hives from two neighbours about two miles apart, and each of them had foul brood. One of them gave off a fine swarm, which filled a super of honey; but it, too, was affected in the autumn. This was the first young swarm which became affected during the summer—all the others were affected in the following spring.

3rd. Last autumn he had three old stocks very much affected. He cut out all the foul comb from one hive, leaving only the honey in the top, and drove the bees out of the other two, killing the two queens, and put all the bees into the hive which had been cleared of foul comb, and fed it this spring. In July he examined it and found all the new comb and old comb diseased from top to bottom, and was compelled to melt it all down.

4th. Two years ago he and I exchanged hives with each other. The one I had from him died in the winter, which prevented us from carrying out the plan of trying if changing the situation would have any effect in removing the disease; and perhaps it was as well for me that it did die, as all my others might have been injured by it. At that time I had no fear whatever, but I would not do such a thing again on any account.

The one he had from me did not give off a swarm, and in the autumn this, too, was affected as much as the other. The only reason he could assign for it was, that during the month of May the bees from his own stocks began robbing—for one day only, but ceased the following, he having prevented them.

These are some of his trials which have been going on for ten years, and his is not the only case. We are aware of eight neighbours within a circuit of three miles from this whose stocks are all affected less or more; and we know of others who have had stocks of forty in number and who have not one at this time. And let me add for the information of Jonas Jackson and Mr. Lowe, that these individuals do not interfere with the natural habits of their bees, but merely put them into a hive when they swarm, and take the honey when they can get it, and some of them did not know they had foul brood until it was pointed out to them.

I will now state the 5th and last case at present. Three years ago he bought a stock swarm from a neighbour who was parting with his whole stock, and which had been long famed for being good honey-gatherers, and it was perfectly clean. The produce of that hive is still clean with the exception of one swarm, a second, which he united with one of his own from the foul stock, having killed its queen, retaining the queen from the pure stock; and it likewise has foul brood, but not so bad as the others. It was fed also with honey from his diseased hives.

If these five cases, which are undoubted facts, along with Mr. Woodbury's experience, do not prove that it is a disease, then what is it? If it is caused by chills of the brood in the first instance, why is it not among mine? There cannot be a degree of difference of temperature between my neighbour's situation and mine. He has tried the covering of some, first with sheets of hair felt inches thick, and then with a covering of straw or reed, and

the whole in a house open to the south. He has tried them also without any covering whatever, but with no apparent difference. If it is by chilling the brood we should find it most on the outside of the combs, and the centre and top of the hive free, as the bees will go there as they retire from the cold; but in his case it is always as bad in the centre and top as on the outer edges.

There is another remarkable point in his case, and which I do not think Mr. Woodbury has noticed—that no drone-brood has ever been affected: if by cold, then the drone must be more hardy than working brood. In my neighbour's case it cannot be said that he exposes them to any chills whatever, as he is very cautious in this respect. I expose mine much more than he has ever done without any bad effects, and I am disposed to think that the brood is more hardy than we imagine. I had a bar-comb of brood lately, in all stages, which fell out while handling it. I might have fixed it again; but my neighbour, being with me at the time, urged me not to do so, as the brood might get chilled, and so propagate the disease among mine. I put the comb into a vinery on a shelf, where the temperature would be as low as 50° at night, with full air on night and day. I used to amuse myself feeding the young grub with a little honey and bee-bread mixed, putting it into the cells on the point of a piece of straw. These grubs lived for two weeks, and at last came out of the cells altogether, crawling about on the shelf till they died; and numbers of the young bees, which were newly sealed-up when put into the vinery, eighteen days afterwards ate themselves out of the cells, many just able to get the head out, and many of the young eggs remained a week without any apparent change on them. When there are bees to attend—even a few—they will still be able to keep the brood alive unless in very severe cold.

I may state also that he never used any foreign honey for feeding—only sugar mixed with their own honey, and his treatment of bees has been the same as mine throughout in every respect. Perhaps I was more particular in giving mine always a new hive when they swarmed; while he sometimes put them into a hive which had been used, although never in a bad state.

I have endeavoured to give the history of my neighbour's troubles with foul brood, in the hope that it may induce others to look out for it in their own apiaries, and if possible discover the cause of the disease. He has no hopes that Mr. Woodbury will get his own apiary clean again until he clears out the whole and begins again with a clean stock, but will be glad, like us all, to hear that he has been able to make a cure.—ALEX. SHEARER, *Yester Gardens*.

VARNISH FOR RUSTIC GARDEN SEATS.—First wash the woodwork with soap and water, and when dry do it over, on a hot sunny day, with common boiled linseed oil; leave that to dry for a day or two, and then varnish it once or twice with what is commonly termed "hard varnish." If well done it will last for years, and will prevent any annoyance from insects.

OUR LETTER BOX.

AGRICULTURAL HALL POULTRY SHOW.—Owing to the gross neglect of the London and North Western Railway Company, my birds were not delivered at the Agricultural Hall Poultry Show in time to be judged. Had they been duly delivered I feel assured they would have figured in the prize list, as they always have done. My annoyance can be imagined.—EDWD. TUDMAN, *Ash Grove, Whitchurch, Salop.*

PRIZES AT THE SHEFFIELD SHOW.—Can any of the exhibitors at the last Sheffield Show, held at the Cremorne Gardens, inform your readers if the prize money has been paid?—EXHIBITOR.

LONDON MARKETS.—AUGUST 31.

POULTRY.

There is no trade, and the supply of poultry is large. We are yet unable to speak confidently about the supply of Grouse; but our impression at present is, that it is not a great breed in Scotland. The birds from the English moors are very good.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	2	6	3	0	Guinea Fowl	0	0	0	0
Smaller do	2	0	2	3	Grouse,	2	6	2	6
Chickens	1	6	1	9	Rabbits	1	4	1	4
Geese	5	6	6	0	Wild do	0	8	0	8
Ducks	2	6	2	6	Duck	0	7	0	8

WEEKLY CALENDAR.

Day of Month.	Day of Week.	SEPTEMBER 8-14, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
8	Tu	Snakeweed flowers.	63.8	47.2	55.0	16	24 a 5	81 a 6	30 a 0	5 a 4	25	2 a 19	251
9	W	De Candolle died, 1841. Bot.	68.6	48.0	58.3	15	26 5	29 6	33 1	33 4	26	2 39	252
10	Th	Knawell flowers.	69.4	46 1	57.7	18	28 5	26 6	38 2	54 4	27	3 0	253
11	F	J. Camerarius died, 1721. Bot.	68.3	44.7	56.5	10	29 5	24 6	44 8	15 5	28	3 20	254
12	S	Hornwort flowers.	68 8	44.6	56.7	14	31 5	22 6	50 4	35 5	29	3 41	255
13	S	15 SUNDAY AFTER TRINITY.	67.7	43 7	56.7	17	33 5	20 6	57 5	56 5	1	4 2	256
14	M	Soapwort flowers.	66.6	46.2	56.4	19	34 5	17 6	6 7	15 6	1	4 23	257

From observations taken near London during the last thirty-six years, the average day temperature of the week is 68.3°, and its night temperature 46.1°. The greatest heat was 86°, on the 12th, 1858; and the lowest cold, 28°, on the 11th and 12th, 1860. The greatest fall of rain was 1.27 inch.

ROSES IN THE SUBURBS.



NE of the most unsatisfactory features of the usual communications upon Rose matters is the array of mere names; and another is the scanty details given of the individual flowers, so that

the uninitiated, whose information should be the primary consideration, are unable to realise an idea of them, or to judge whether they are likely to repay the trouble and expense of experiment. Bearing this in mind, I purpose in this paper to treat upon a few prominent favourites from a suburban's point of view. The results are those of actual practice and observation, which, however, may not always correspond with those of growers more favourably placed. I must premise that most kinds come relatively smaller with me than in the country. That, however, is scarcely a fault, for what they lose in size they gain in symmetry and compactness; indeed, the craving after mere bigness is the sore vice of the day. Not that size when combined with other recognised perfections is objectionable, but this union is not often found. I have seen stands this year in which, a day after the show, there was scarcely a Rose that did not display an eye like a buttercup, and that, too, in sorts that ought to be perfectly double if not overgrown.

The field of experiment, then, being a suburban locality, Madame Charles Wood and Charles Lefebvre appear to be, taken all in all, two of the best Roses out whether for the country or for town. The first is, perhaps, the freest bloomer, large here, at the nurseries monstrous almost, yet perfectly double and well-shaped. The colour is a brilliant light crimson, passing into deep rose; habit vigorous and free. Charles Lefebvre is a splendid Rose, large, well-formed, finely coloured; a deep crimson-scarlet, shaded with a purplish tinge in the centre; changes to a deeper tint when going off, but is still good, and stands atmospheric trials, perhaps, better than any other kind. Respecting this variety, I am disposed to believe, from its smooth varnished-like wood and leathery foliage, that there must be a touch of the Bourbon blood in it, and also in *Senateur Vaisse*. Both these kinds also bloom well in the autumn, which tends to confirm the opinion.

By the way, the *Senateur* has not done well with me this season. For general purposes *Jacqueminot* still continues the better. *Souvenir de Comte Cavour*, *Vicomte Vigier*, *Monte Christo*, *François Lacharme*, and *Triomphe de Caen* come next in order of success. *Souvenir de Comte Cavour* (*Margottin's*), is of a very rich velvety crimson, a very good grower and bloomer, form and colour of the highest merit. *Vicomte Vigier*, also

a vigorous grower and free bloomer in the purple-crimson or maroon line of colour, is a decided acquisition for suburban amateurs, who cannot succeed with *Louis XIV.*, *Arango*, *Patrizzi*, and the like. All of these have done worse in my hands this season than ever; and in spite of their beauty in congenial positions I have determined to discard them while I remain in these parts.

Monte Christo, dark crimson, imbricated form and moderate habit, is also good. *François Lacharme* is a fine, large, vigorous-growing Rose; colour clear red or bright carmine. In favourable soils it is perhaps the best flower of the season, though not over-free in bloom. We have, however, already others in much the same style quite as good, which is not the case as to *Madame C. Wood* and *Charles Lefebvre*, both of which are distinct. *Triomphe de Caen* is from the *Général I* imagine. It is a nice, bright, free-growing kind, but not quite the colour of a *Tom Thumb* *Geranium* as described by Mr. Rivers in remarks in section 2, H.P.'s, in his catalogue: nevertheless, it is worthy of a place in any extensive selection. *Madame Clemence Joigneaux*, a robust grower, somewhat after *Madame Domage*, or perhaps *d'Angleterre*, does well, but is by no means novel. *Louise Darzins* (is not this really a *Noisette*?) is a pretty white, small but symmetrical, and every way desirable for gardening purposes. We still are in want of a first-rate white H.P., and I do not believe any of the novelties for this season will supply the vacuum. *Alphonse Damazin*, scarlet-crimson, fine medium flowers in clusters, is to be recommended also. *Maréchal Vaillant* is a very free grower but shy as to bloom. Messrs. Wood & Son, of Marcsfield, in their catalogue describe this as being a *Perpetual Paul Ricaut*, which, indeed, it much resembles. At present I am not certain about the behaviour of *Prince Camille de Rohan*, very dark. I fear it is one of the slender twiggy habit of growth, which never succeed here. *Turenne*, bright red, large, and flat, will do: there are, however, plenty of the kind better. *Nôtre Dame de Fourvières*, imbricated shape, pale pink, robust grower, almost spineless wood, is very distinct—a rare quality now-a-days, for I think rosarians will admit that one-half the varieties in the catalogues might be struck out and not missed.

I find these remarks extending to so much space that I must defer noticing older varieties, merely observing that *Duc de Cazes* and *Colonel Cambriels* have done well this year. It will be observed that all previously noticed belong to last year's introductions, indicating that, as remarked by others as well as myself, to have been an unusually good season.

It must be borne in mind that it is a difficult undertaking to prove decisively the suitability of particular varieties to particular situations. Some plants do promisingly the first season after removal, yet never bloom or thrive again. There appears to be a reserve stock of vigour stored up in the plants themselves, especially when brought from first-rate soils, which carries them through the trials of a first season. If this stock of vigour is replenished by a strong and healthy growth

where they are removed to, the plants become established; but if not, they dwindle till they finally die. This may be especially seen with maiden plants from the nursery—indeed, there are some favourite exhibition sorts that never really bloom well except upon maiden plants. These may be called nurserymen's Roses. Madame Vidot is one of such. It is a great advantage that nurserymen possess as exhibitors over amateurs, that they have fresh plants every year to cut from for the shows.—W. D. PRIOR, *Homerton*.

THE CRYSTAL PALACE SHOW.

SEPTEMBER 1ST AND 2ND.

THE Exhibition on this occasion, though consisting of florists' flowers and fruit only, was magnificent, and of such extent that the tables on which it was arranged occupied nearly the entire length of the building, one half being filled with flowers, the other with fruit. The charge for admission being very low, and the weather on the first day very favourable, the attendance of visitors was large.

DAHLIAS constituted the principal feature in the floral display. Mr. Turner and Mr. Keynes, of Salisbury, taking the principal honours. The stand of forty-eight which Mr. Turner exhibited, and for which he received first prize, did not contain a single inferior flower—all were perfect. Madge Wildfire, Beauty of Hilpertion, Mrs. Trotter, Donald Beaton, Umpire, Hugh Miller, Criterion, Dinorah, Mr. Stocken, Cygnet, Sidney Herbert, Peri, Charlotte Dorling, Lord Derby, Mauve Queen, Mrs. Henshaw, Triomphe de Pecq, Andrew Dodds, Mrs. Vyse, Miss Pressley, and Mrs. Piggott were some of the finest. Mr. Keynes, who was second, had also an excellent stand, but some of the flowers were neither so large nor so perfect in outline as Mr. Turner's. Mr. Cattell, of Westerham, was third; Mr. Walker, of Thame, fourth.

In twenty-four Mr. Turner was also first with Lord Derby, Andrew Dodds, Umpire, Hugh Miller, Lady Popham, Triomphe de Pecq, Earl of Shaftesbury, Mr. Stocken, Cygnet, Charlotte Dorling, Beauty of Hilpertion, Norfolk Hero, Lord Palmerston, General Jackson, Criterion, Lord Dundreary, Donald Beaton, Mrs. Henshaw, Midnight, Mrs. Vyse, George Elliott, Mauve Queen, Bob Ridley, and a seedling. Mr. Keynes was second with a stand scarcely inferior, in which were fine blooms of Lord Palmerston, Juno, Disraeli, John Wyatt, Lord Shaftesbury, Peri, John Keynes, Lilac Queen, Pauline, Mrs. Henshaw, Lord Derby, and Lord Russell. Messrs. Saltmarsh, of Chelmsford, had the third prize, some of their blooms—as Baron Taunton, Lord Derby, Andrew Dodds, Lilac Queen—being also very fine. Mr. Walker was fourth; Mr. Legge, of Edmonton, fifth; Mr. Barnes, of Danecroft Nurseries, sixth.

In the Amateurs' Classes the competing stands were very numerous, and there were but few blooms which could not be considered fine.

In twenty-four, Mr. Thornycroft, of Floore, near Weedon, was first—Volunteer, Juno, Peri, Criterion, Lollipop, John Dory, Lord Derby, Vestal, Mrs. H. Piggott, and Lord Palmerston, being the most remarkable. Mr. Sladden, of Ash, was second; Rev. C. Fellowes, Shottesham Rectory, third; Mr. Perry, of Castle Bromwich, fourth; Mr. Moffat, Easton Hall, fifth.

In twelve, Mr. Thornycroft was also first. His Volunteer, Lord Derby, Admiral Dundas, Criterion, and Beauty of Hilpertion, were all large and fine. Indeed the same might be said of the rest of the blooms he showed. Mr. Charlton, of Kilworth, was second; Mr. Sladden, third; Mr. Wakeman, Eltham Park, fourth; and several other very good stands were shown.

In twelve Fancies (Nurserymen), Mr. Turner had first prize for fine blooms of Pluto, Zebra, Garibaldi, Queen Mab, Rev. J. Dix, Countess of Shelburne, Harlequin, Summertime, Pauline, Lady Paxton, Mrs. C. Kean, and Fairy Queen. Mr. Keynes was second—Triomphe de Roubaix, Mrs. Wickham, Duchess of Kent, Leopard, Oliver Twist, Regularity (new), and Samuel Bartlett, also new, were the most remarkable. Mr. Legge was third, and an extra prize was given to Mr. Cattell.

In the Amateurs' Class, the Rev. C. Fellowes was first; Mr. Sladden, second; and Mr. Perry, third.

Several seedlings, dahlias, geraniums, and other plants were also shown.

Keynes, Legge, Bragg, and others. The first-named exhibitor receiving first-class certificates for Polly Fawcett, Edward Purchase, Samuel Bartlett, Fanny Purchase, and Anna Keynes. Mr. Collier, Bethnal Green, had a similar award for Princess Alexandra; and several second-class certificates were awarded to Mr. Keynes, Mr. Bragg, and Mr. Wheeler.

ASTERS, both German and French, were in the highest perfection. Those from Mr. Betteridge, Milton Hill, Stevenston, who had the first prizes in both classes, were beautiful examples of what careful selection and cultivation will achieve with this flower. In the German Quilled Class, Mr. Besley, of East Hundred, Berks, was second, and there were several other very meritorious collections. In the French Tasselled Class Mr. Betteridge was also first with large and beautiful blooms; Mr. Wyatt came next with blooms large, but not so regular; Mr. C. Sandford, third; and an extra prize was awarded to Messrs. Saltmarsh. Messrs. J. Chater, Ward, Jennings, Cattell, and Paul, had also good stands.

ROSES.—The display of these was not extensive, nor could it be expected to be so good as earlier in the season. The only exhibitors in the Class for thirty-six trusses were Messrs. Paul & Son, who had some good blooms of Louise Peyronny, Madame Rivers, Madame E. Verdier, and Lord Raglan. In twenty-four Messrs. Paul were also first, Mr. Turner second, and Mr. G. Clark, of Brixton, third, the latter having also a splendid box of Général Jacqueminot, the bright glowing red of which was very effective; and the same excellent variety was shown well in all the stands. Good examples of Sénateur Vaisse, Madame C. Crapelet, Souvenir de Comte Cavour, Gloire de Dijon, and Paire de Terre Noire were also shown.

Among Amateurs Mr. Exell, gardener to J. Hollingworth, Esq., of Maidstone, who has long figured as one of our most successful amateur growers, took the first prize. Pio Nono, Duc de Rohan, Gloire de Santenay, Madame Boll, and Sénateur Vaisse were excellent. Mr. Dennis, of Folkington, was second; Mr. Moffat, gardener to Viscount Maynard, was fourth; good boxes also coming from Dr. Cooper, of Slough, and Mr. Pullinger.

HOLLYHOCKS.—Whether from the sun or in consequence of having been previously shown, some of these looked rather faded; still the blooms were of first-rate excellence. Mr. W. Chater had the first prize for twenty-four. Minerva, Governor-General, George Young, Lady Dacres, Warrior, Mrs. F. Mackenzie, Dame Blanche, James Allen, Princess of Wales, Cynthia, Princess, Joshua Clarke, and Matchless were all fine. Messrs. Downie, Laird, & Laing, who were second, had large and full blooms of Yellow Defiance, Pre-eminent, Countess of Craven, Purple Prince, Alexander Shearer, Lady Dacres, and Lord Loughborough. Mr. J. Chater, Gonville Nurseries, was third. His blooms were also very good, and well arranged for effect. In Messrs. Paul and Son's stand Black Knight was conspicuous for its dark colour, and Jules Margottin was a beautiful rosy crimson.

In the Amateurs' Class there were no blooms to equal those shown by the Rev. E. Hawke, of Willingham Rectory. Among them were David Foulis a white seedling, Purple Prince, Mrs. Cochrane, Premier, Prince Charlie (very pretty), Lord Loughborough, Queen Victoria, and Joshua Clarke. Mr. Plester, gardener to Mrs. Rush, Bishop Stortford, was second; Mr. Forrester, gardener to Mrs. Ogle, Beckenham, third; Mr. Smail fourth.

VERBENAS.—There was a good display of these, Messrs. Perkins, of Coventry, being the principal prizetakers, and exhibiting L'Avenir de Bellant, Lord Leigh, General Simpson, and other kinds of established merit. Mr. Perry, of Castle Bromwich, who was awarded a second prize, had among others a seedling, the blooms of which were cupped, rosy crimson, with a pale yellow eye.

GLADIOLUS.—Of this flower, a splendid collection came from Messrs. Youell, of Great Yarmouth, among which the bright scarlet Brechtleysensis was conspicuous, and a first prize was awarded. Messrs. Youell, however, only came off second best in the class for the best collection, where Mr. Standish took the lead with Scottish Chief, Edith Dombrain, Mrs. Dix, Impératrice Eugénie, Reindeer, and other new and striking varieties. Messrs. Youell had Mr. Youell, a bright crimson and white seedling; Dr. Lindley, pale

rose flamed with carmine; Napoleon III.; Reine Victoria, white striped with violet and carmine; Impératrice Eugénie, and other first-rate sorts.

MISCELLANEOUS.—No prizes were offered for miscellaneous objects, and but few were produced. The beautiful *Lapageria rosea*, which stood at the end of the table where the flowers were displayed, cannot, however, be passed over. It came from Mr. Uzzell, gardener to the Dowager Duchess of Northumberland, and was truly a magnificent specimen of this splendid climber, being covered with a profusion of its rose-coloured flowers, and these of the largest size. Some double Zinnias from Mr. Banks, of Sholden, Deal, received an extra prize. Their colours were brilliant, and some gave promise that in course of time the flower would approach towards the *Chrysanthemum* in form, if not in size.

FRUIT.

The best collection of eight dishes came from Mr. Henderson, of Trentham. It consisted of an Enville Pine, Trentham Green-fleshed Melon, three bunches of Barbarossa Grapes, weighing 10 lbs. 11 ozs., large bunches of Canon Hall Muscat, Barrington Peach, Pitmaston Orange Nectarines, Moorpark Apricots, and Morello Cherries. Mr. Bailey, gardener to T. T. Drake, Esq., of Shardeloes, was second with a Providence Pine, Bailey's Green-fleshed Melon, Black Hamburg and Bowood Muscat Grapes, Peaches, Nectarines, Plums, and Pears. Mr. Henderson had third prize for second collection; and an extra prize was given to Mr. Beale, of Wood Hall Park, for one containing an Otaheite Pine of 7½ lbs. Collections were also sent by Messrs. Turnbull, of Blenheim; Young, of Havant; Spivey, Pragnell, Pottle, Pullinger, Young of Highgate, and Cross.

PINES were not numerous, but some were of very large size. A noble Queen of the immense weight of 7 lbs. 10 ozs., but not ripe, from Mr. Hall, gardener to Lord Scarborough, received a first prize. Mr. Young, gardener to C. Bailey, Esq., Aberdare, had second for one weighing 5 lbs. 6 ozs.; and Mr. A. Grant, third, for a handsome fruit of 4 lbs. 14 ozs. Messrs. Page and Dwerrihouse had prizes in the Class for other varieties.

MELONS were extensively shown, the kinds being principally Golden Perfection, Orion, Trentham Hybrid, and Scarlet Gem. In the Green-fleshed Class, Mr. Scorer, gardener to C. Eyre, Esq., was first with a hybrid; Mr. Varney, second with Orion; and Mr. Turner, third with Marquis of Ailsa. In Scarlet-fleshed, Mr. Gadd, of Dorking, was first with Windsor Prize; and Mr. Whitaker, Crewe Hall, second with Scarlet Gem.

GRAPES constituted the most important feature of the display, and the fruit exhibited was of the highest merit.

Mr. Meredith, of Garston, was first in the Class for baskets of not less than 12 lbs., with Black Hamburg, splendid berries as black as sloes. Mr. Morris had also a first prize for the same kind, equally well ripened. Mr. Wortley, gardener to Admiral Cary, Norwood, was second for Canon Hall Muscat, of which the berries were of the largest size; and Mr. Harrison, Oatlands, Weybridge, had a like award for Muscat of Alexandria. Mr. Drummend, gardener to J. S. Smith, Esq., Tunbridge Wells, was third with Mill Hill Hamburg, the berries large and fine; and Mr. Henderson had an extra prize for Lady Downes'. Excellent baskets also came from Messrs. Monro, Solomon, Embrey, and Wills.

In the Class for the best three bunches of Black Grapes, Mr. Richards, of Grimstone Park, Tadcaster, was first with splendid evenly-grown bunches of Black Hamburg; Mr. Meredith, second with three weighing together 10 lbs. 13 ozs., the centre one alone being 5 lbs. 9 ozs. The berries, though not so regular in size as in the preceding, were well coloured. Mr. Drummend was third with Mill Hill Hamburg, the berries very large; and an extra prize was awarded to Mr. Henderson, of Trentham, for Lady Downes', fine. There were besides many other exhibitions well worthy of notice.

In White Grapes, Muscat of Alexandria, from Mr. Drummend, took first prize. These had the same beautiful amber tinge, betokening perfection of ripening, as the bunches from the same exhibitor which attracted so much attention at the Great Fruit Show of the Royal Horticultural Society in October of last year. Mr. Wills was second with Trebbiano, weighing 9½ lbs.; Mr. Turnbull, third with very fine bunches of Muscats, but not so ripe as Mr. Drummend's. Mr. Mere-

dith took the first prize for the largest bunch of any kind with Trebbiano, an enormous bunch of 5 lbs.; Mr. Goldsmith, Dorking, was second with Barbarossa, weighing 5 lbs. 14 ozs.; and Mr. Henderson, third with Marchioness of Hastings, 4 lbs. 7 ozs.

PEACHES.—Of these the exhibitions were very numerous, Noblesse, Royal George, Violette Hâtive, Bellegarde, and Walburton Admirable, being the kinds chiefly shown. Mr. Kaile was first with Barrington, very fine; Mr. Cross, gardener to Lord Ashburton, had a second prize for the same kind; and Mr. Dawson took a similar prize for Violette Hâtive; Vanguard, from Mr. Plester, came in third.

NECTARINES.—Of these Pitmaston Orange, Newington, Downton, Elruge, and Hunt's Tawny were the kinds principally exhibited, and most of the dishes were excellent. Mr. Ferguson was first with Pitmaston Orange; and Mr. Henderson second with Elruge.

FIGS were poorly represented as regards numbers. Brown Turkey, White Marseilles, and Brunswick were the kinds shown. Mr. Eman, gardener to Miss Trotter, Epsom, was first; Mr. Wyatt, of the same place, second; and Mr. Turner third.

CHERRIES.—Some very fine Morellos were shown. Mr. Bailey, of Shardeloes, was first with that kind and Bigarreau; Mr. Dawson second with Morello and Florence; Messrs. Lane third with Morello and Bigarreau.

PLUMS.—The competition in these was very close, and the competitors numerous. The varieties principally shown were Green Gage, Kirke's, Washington, Jefferson, Goliath, Denyer's Victoria, and Yellow Magnum Bonum. Mr. Bailey had first prize for Washington, Sir C. Napier, and Prince of Wales; Mr. Pomfret, Eton College, second for Washington, Kirke's apparently, but unnamed as all the rest were, and Denyer's Victoria. R. Webb, Esq., of Reading, was third with fine examples of Washington, Yellow Magnum Bonum, and Goliath. Pond's Seedling from Mr. Grover and Mr. Gale, of Hammersmith, was very large.

APPLES, both dessert and kitchen, were shown in good perfection for the time of year, and the competitors were numerous. Mr. Pomfret was first with Cox's Orange, Red Astrachan (large and beautifully coloured), Ribston Pippin, Cox's Pomona, Peach Apple, and Whorle Pippin. Dr. Cooper, of Slough, was second with Devonshire Quarrenden, Cox's Orange Pippin, Cox's Pomona, Blenheim Pippin, Ribston Pippin, and Cellini.

In kitchen Apples Mr. Mortimore, Carshalton, was first, Mr. Vickary second, and Messrs. Lane third. Some excellent examples of Tower of Glamis, French Codlin, Blenheim Pippin, Hawthornden, London Pippin, Dumelow's Seedling, and Kentish Fill-Basket were exhibited.

PEARS.—Williams' Bon Chrétien was the kind principally shown, but there were also some good Marie Louise, and Louise Bonne of Jersey. Mr. Harrison, of Weybridge, was first, in three dishes; Mr. Nicholls, Hammersmith, second; and Mr. Donald, Leyton, third. There was a Class in which weight was to be the point of merit. A dish of Uvedale's St. Germain weighing 10½ lbs. was first; Grosse Calebasse, from Mr. Dwerrihouse, was second; but in this instance, as in most others, the weight was not stated.

MISCELLANEOUS.—A collection of Pines, Apples, Pears, Plums, Figs, and Vines in pots, from Messrs. Fraser, had first prize. Mr. Henderson, of Trentham, was second, for some large Moorpark Apricots. Mr. Webb, of Reading, had a collection of eight kinds of Nuts, among which Webb's Emperor and Prize Cob were very large. Some excellent Red and White Dutch Currants were shown by Mr. Gregory, Clarendon; *Physalis edulis*, by Mr. Pottle and Mr. Marsham; and Hall's Volunteer and Telegraph Cucumbers by Mr. Hall, of Colchester.

SHOWS AT THE AGRICULTURAL HALL, ISLINGTON.—It may be interesting to our readers to know, that at the recent Show held in the above Hall, a meeting of the exhibitors was convened in order to ascertain their views as to the advisability of holding periodical shows of fruit, flowers, &c., at the above Hall. It was agreed to by all present that at least two might be held annually. From a want of knowledge as to what date other Societies would hold their Meetings in the ensuing summer nothing could be decided.

upon for the present. It was agreed, however, that at an early date a Committee should be formed to fix the dates and make up a schedule, which, from the liberality of the active Manager's suggestions, we doubt not will contrast favourably, as regards amount of prizes, with some of the schedules of leading Societies.

NOTES ON GARDENS PUBLIC AND PRIVATE.

NO. 4.—LORD LECONFIELD'S, PETWORTH HOUSE, SUSSEX.

WITH strange feelings one revisits the scenes of boyish days; and how wisely ordered is it that, in looking back, all the disagreeables connected with the past vanish away, and one only recalls those days which in modern parlance would be called "jolly!" Here was I within a few miles of my former school-place—Medhurst. There flowed the Rother, in which I had had many a plunge; in the Park were the noble Chestnut trees, off which some of "ours" who had connections in Petworth used to levy toll; and vividly came before one all the happy hours of one's boyish days. I did just think of the many times when, instead of enjoying a quiet dip, one of the big boys would take me by the nape and one leg, and pitch me into a hole some 10 feet deep, where another was waiting to receive me; and then one recollected what terrible work it was to get up early and have to clean my "master's" boots and shoes, or to fag out at cricket, and such little disadvantages. But, after all, these left a very faint line in one's recollection, like those of whom we read—that they forgot soon all their hard servitude, but remembered the "fruit that they did eat in Egypt freely, the Cucumbers, and the Melons, and the Leeks, and the Onions, and the Garlick." But one's views had quite changed: flowers which then would have been nowhere compared with a game of cricket or three-hole-span, were now the ruling powers; and to visit the gardens of Lord Leconfield one object which I had proposed to myself in my short visit to my friends at Petworth; and of some of the most notable things it is my desire to give a brief record.

I found, as I have invariably found to be the rule, that on telling the object of my visit every information is most readily and cheerfully given; and Mr. Jones, the able and intelligent gardener, on whose shoulders no small amount of responsibility rests, was kind enough to go with me over the gardens and grounds, and I only regretted that the shortness of my visit prevented me from gaining much and valuable information in the various departments of horticulture. The extent of walled-in garden ground which Mr. Jones has under his care amounts to fourteen acres; and some idea of the work that this involves may be gathered from the fact that he has two miles and a half of nailing to get through! Now one does expect in a royal establishment like Frogmore to find things done on a large scale; but this conveys to my mind a wondrous notion of the princely manner in which our great magnates of the aristocracy live on their estates. Nor is Lord Leconfield one of those who think that work is to be done without hands. He employs liberally, and allows Mr. Jones to feel that he is not required to have work done any way. Thus, while I believe at Frogmore, where (owing, doubtless, to parliamentary revision looming in the background), one man is allowed to an acre, here twenty men are allowed for the fourteen acres, besides whatever additional help may be needed—and surely this is the wisest plan and truest economy. As a consequence everything was in excellent order, and signs of progress visible on every side. The range of houses is not extensive, many of the old ones having disappeared, and new ones not yet having supplied their place; but some are being built, and the most is made both of the houses and ranges of pits and frames which the garden contains; for it is in fruit and vegetables that the glory of his establishment consists, for, save one long walk running down the centre of the garden, which has been most successfully managed, there is no attempt at a flower garden. Would that I had the ear of his lordship, and I would most assuredly ask whether something might not be done to give a more ornamental character to the place. With such a park I can quite understand that a nobleman might wish to have the noble herds that adorn the park coming close to the windows of the mansion; but surely the view

would be none the worse for having a brilliant parterre between them and it. At any rate, in some place or other I should like to see a gardener of Mr. Jones's evident skill and taste having a scope for his talents, for I am sure the result would be worth looking at.

Fruit is managed here on a somewhat extensive scale. Thus, during last year there were cut in nine months 260 Melons. To effect this in by no means a large space, and to run it over so long a period of time, shows good gardening and management. The Pines were also in excellent condition, the Queen being that most in use; and as many as forty Pines weighing from 3½ to 4½ lbs. have been sent in at one time for preserving, and, of course, a tolerably constant supply for the ordinary use of the house is maintained. In the Peach-house the greater quantity of the fruit had been gathered, but there was still some left of excellent quality. Of this house Mr. Jones mentioned a curious fact—that when he was making the house ready it so happened that there was considerable delay, and that the trees were ready long before the house was—that he had to keep his trees out of doors under walls, moving them about from time to time—that they were not planted until they were in full bloom, and yet that he gathered 40 dozen of Peaches from that house the first season. This led on to the subject of orchard-houses; and I may just mention that Mr. Jones, who is a "thoroughly practical man," stated that he had carefully examined the subject, both on the score of economy and efficiency. He had determined to suggest to his employer the propriety of building a regular Peach-house in preference to an orchard-house, and that he had heard or seen nothing since to cause him to regret his determination. Grapes were, as might be supposed, excellent; and Spary's fumigator has been found to be of great service in preventing the progress of mildew—in fact, far superior to anything else. The very simple manner in which the pulling up and down of the sashes was managed struck me very forcibly—so much so that I have obtained a sketch of it, which I hope will shortly appear in *THE JOURNAL OF HORTICULTURE*.

Strawberries are grown extensively, and the soil suits them well. British Queens were still in bearing, while Keens' Seedling was just coming in. As forcing is extensively practised, the plan here is to use a large number of plants for this purpose, and when they have finished to turn them out in a carefully prepared quarter, to attend to them regularly in the matter of watering, &c., and to look confidently for the result: a good crop of Strawberries coming in immediately after the British Queens are over, and lasting on throughout August, thus effecting what none of the so-called late Strawberries do—a prolongation of the fruiting season. I dare say this may be a very ordinary method of procedure; but it was new to me, at any rate upon such a scale as practised here.

On the walls was, of course, to be found an immense quantity of fruit, although some of the trees were very old and exhibited evident symptoms of decay, some of the Pear trees bearing the mark of 1803 on them. Nor were humbler fruits neglected. There is an immense collection of Gooseberries comprising 150 sorts, many of them good, others having only their size to recommend them, and others absolutely worthless; while a bed of Cranberries, a fruit little known or appreciated in this country, furnishes an ample supply of a very nice ingredient for tarts, &c. The bed is 30 feet wide, and was in full vigour. I must not forget to mention a Fig tree in a house. It is of the *Nerii* variety, and is believed to be one of the oldest of the kind in England. From it last year Mr. Jones gathered 5000 fruit in September, and the last sent in was on January 7th.

Vegetables are cultivated on the same extensive scale as fruit, and present as striking features. Thus Dwarf Kidney Beans are obtainable every day in the year. They are sown, not in pots, but in pits, precisely as in the open ground; and a succession is sown every three weeks until the out-of-door crop can be used. Peas were here, as in most other places, suffering from mildew; but one sort particularly struck me, and Mr. Jones stated it to be one of the best Peas grown. It is called Carpenter's Express. A crop was sown on November 20, and was gathered from on May 7. Then, again, Cucumbers were excellently managed. They had been in bearing since the 7th of January; and Mr. Jones was now cutting back some of the plants with stems

an inch in diameter and quite woody, and from these a second and excellent crop will be obtained. The very best Lettuce that I have seen this summer was here, and only one kind is used—a hybrid of Mr. Jones's own raising; and when once introduced I question whether any other of the numberless varieties of Cos Lettuce (*Lactuca romana*), would be grown.

I have said that little can be said on the subject of flowers, but what is done is done well. The house plants were models of health, while the bedding-out displayed the hand of a master. Annuals of the commoner sorts—*Nemophila*, *Mignonette*, &c., are largely cultivated; for among Lord Leconfield's practices is one worthy of imitation by all our great landowners—viz., the encouragement of a taste for flowers. Every year Mr. Jones makes up five thousand packages of flower-seeds, which are on the annual rent day distributed to the tenants; three men being employed all day, as the tenants come out from the house, to give them. Imagine what labour this is; but also see in it a recognition of that truth one would so earnestly impress on others—that a love of flowers is ever desirable from the very lowest to the very highest. *Verbenas* have received somewhat of Mr. Jones's attention, and he has succeeded in raising one of a shade of maroon, which I think is likely to be useful as a bedding variety.

Something has been said lately in *THE JOURNAL OF HORTICULTURE* on the subject of trees; and the dimensions of some of them given. There were some remarkably fine trees in the demesne here, but I had only time to measure one, but that seemed to me a unique specimen—a Tulip Tree (*Liriodendron tulipifera*), which at 5 feet from the ground measured 17 feet in circumference.

Such, then, are a few rough notes on these well-managed gardens. Let it be borne in mind that they are not spick and span new, with all modern improvements in buildings, &c. No, they are quite the reverse of this; but they have an intelligent head and a liberal owner; and I have never seen an establishment which more thoroughly gave me the idea of clear sound sense in the administration, or liberality in the supply; and Mr. Jones may well be proud of the admirable efficiency in which each department of the garden is maintained.—D., Deal.

WHAT OTHER FLOWERS THINK OF IT.

"Ah! General Tom Thumb, how do you find yourself this fine, bright sunny morning? I see you are shaking the dewdrops from your flowers and leaves. These are dry times, and, doubtless, you think as I do, that the drops are more grateful at your feet than on your head."

"True, Miss Verbena. What you express I am sure we all feel. Some happy event must have taken place in the world, or in fairyland, for Nature's tears have fallen but sparingly this season, while her smiles have been abundant. We could do no less in acknowledgment than put on our gayest attire and look our best; but even this becomes in time oppressive."

"Really, General, you take an extensive view this morning. You surely do not allude to that event which set the whole community rejoicing while the year was yet young. In short, do you allude to the Royal wedding? if not, I can form no idea of what you mean."

"Well, may be I do, and perhaps I do not. I will leave you to form your own ideas of it. We had a grand company here yesterday, and probably you overheard some of the conversation as one party of ladies and gentlemen after another passed this way."

"I did, General, and felt highly flattered at the unusual compliments that were showered upon me and my sisters; and I also heard some very complimentary remarks directed towards yourself and your younger brothers—such, in fact, as are likely to keep up your spirits for the next two months in spite of the dry times."

"Ah! Miss Verbena, it is refreshing to hear oneself praised in such a manner. It repays one for a deal of suffering; and, in fact, something of the kind was needed in return for the amputation of one or two of my limbs. That, however, is over, and the wounds cicatrised. But of the conversation, I cordially agree with my Lord S., that such

bright and glowing masses of beautiful colours as we furnish for five months of the year are worth waiting the other seven for. And do you remember the words of Lady S., that the looking over a broad expanse of well-kept, smooth-shaven lawn, dotted about with fine shrubs, and relieved by beds of the choicest flowers, such as we furnish, was like transporting a mortal into fairyland, and far surpassed anything that ever could be imagined in the 'Arabian Nights;' in fact, that it was a most thoroughly enjoyable sight?"

"Yes, yes, I remember: and also as a group of ladies were casting admiring glances at us, one remarked that there was something so charming in the *Verbena*, so unassuming, and yet so engaging, that it would never fail to be a favourite flower. Of course, we could do no more than put on our sweetest smiles, and endeavour to look our best. It was the only return we could make."

"And that was and is all that is required of us. Rest assured, that in trying to do more we should only put ourselves in the position of the jackass which tried to please his master by jumping upon his lap and licking his face. By the way, do you remember, Miss Verbena, when we were put out by the fence, preparatory to being bedded, if not wedded (excuse my boldness), do you remember overhearing a confab between Mr. Hollyhock and Miss Rose? Now, I have no objection to Mr. Hollyhock giving himself such airs, and nursing up the notion that he is a stately old flower. I quite agree that he is; but there was no necessity for him to run us down, and call us 'things of delicate constitution.' He himself has to bear his part in this fashionable style of planting and gardening; and if Mr. Cuttings has it all to himself, he comes in for his full share of neglect. But then it is not so, and he has found out how people's thoughts and ideas change with the season, as witness the numerous visitors we have."

"You are quite right, General. And then, again, as to the disparaging remarks of Miss Rose, in reference to her cousins, 'those lanky hybrids:' why the truth is, those hybrids are more thought of than ever she was. But, hark! I hear footsteps."—F. C.

SUCCESSFUL ORCHARD-HOUSE MANAGEMENT.

I HAVE just seen an orchard-house in excellent order, and full of fruit, at Littlegreen, near Petersfield. It is a lean-to, 15 yards by 6, and was built in 1861, when it was filled with Peach, Nectarine, and Plum trees from Mr. Rivers. There is an abundant crop of fruit on all the trees, and the only mistake in the management is that the fruit on some of the trees has not been sufficiently thinned. The fruit of those trees on which the number is not so great is very fine, and the flavour of all is first-rate.

There is also to be seen in these gardens a Peach-wall, facing east, not glazed, with a very good crop of Peaches. The trees are very healthy, with clean green foliage, without any signs of red spider, and their healthy condition seems to be owing to their having been syringed regularly two or three times a-week with soapsuds, mixed occasionally with sulphur.

The active and intelligent gardener told me that if he had not done this, the trees would have been eaten up by red spider; but as soon as he saw the first sign of red spider he began with the soapsuds, and never ceased till the fruit began to ripen. He has the reward of his care in the very satisfactory state of his trees. If all gardeners were equally wide awake, we should not see nor hear of so much red spider as we do.—PETERSFIELD.

THE GARDENERS' FRIENDLY SOCIETY.

I AM of the same opinion as Mr. D. Phelan and Mr. John Hague respecting this Society. I feel sure if it were once started it would be well supported.

I had previously filled up a form to become a member of another Society, but have laid it by till I see the result of this. I have already belonged to the Ancient Order of Foresters for upwards of seven years, and am pleased to say I have never taken anything from that Society; and if I

join this I hope I shall never want anything from it. I shall only be too pleased to contribute my mite to help others, and I hope all who join it will do so in the same spirit.—JAMES CLEWS, *Gardener, Cloone, Mohill, Co. Leitrim, Ireland.*

[We are able to state that steps are taken towards establishing the proposed Society; but it is still very desirable to have criticisms and communications upon the subject.—Eds. J. of H.]

NOTES ON FRUITS RECEIVED.

WE have received several specimens of fruits of so unusual a character, and of varieties that are so little known in this country, that we take this opportunity of bringing them before the notice of our readers.

The first we received were from the Rev. Thomas Bréhaut, of Guernsey, well known as the author of an excellent practical treatise on the cordon system of training. Through the kindness of this gentleman we have been introduced to an acquaintance with two Peaches of American origin, of which we had previously heard, but of which we had not seen the fruit in this country. They are both varieties peculiar to the Southern States, and are, we believe, natives of Georgia.

STUMP THE WORLD is of large size. The specimen received was 9½ inches in circumference. The shape is roundish, rather inclining to roundish-oval, flattened and rather pitted at the apex; the suture shallow and passing a little beyond the apex. Skin pale yellowish-white, finely dotted with red, and with a good deal of colour next the sun. The flesh is white, very melting and juicy, rich, and deliciously flavoured. This is a fine Peach.

EXQUISITE belongs to the class of yellow or Apricot Peaches, and is also of very large size, as large as the preceding, but is terminated at the apex by a rather prominent and sharp nipple. The flesh is yellow, and in the specimen received it was rich and highly flavoured—quite equal in condition to what we once, and only once, tasted in Crawford's Early, to which this variety is nearly related.

These two varieties were grown in an orchard-house without heat, and on very small trees, which produced seven and four fruit each. This is, doubtless, the first occasion on which these varieties have fruited in England.

From George F. Wilson, Esq., of Gishurst Cottage, Weybridge Heath, we have also received some very fine specimens of successful orchard-house cultivation. We can hardly say we were astonished to see the specimens that gentleman forwarded, because we have on former occasions seen and remarked upon the produce of the Gishurst orchard-houses, and it has invariably been of a kind that excelled anything we have seen produced from any other quarter. The fruit we now allude to is a dish of Louise Bonne of Jersey Pears, and one of Transparent Gage Plums. The former are decidedly the finest specimens of the kind we have seen. Beautiful as that variety usually is, these are unusually so. The largest was 4½ inches long, and 3 in diameter; the skin highly coloured, and speckled like a trout. The Transparent Gage Plums were of a fine opaline appearance, and dotted with crimson just enough to suggest the similitude to the opal's fiery lustre. The skin and flesh were quite transparent, and the latter delicious in flavour.

Mr. Edward Pierce, of Yeovil, sent a basket of very handsome Nectarines called the **CRICKETT NECTARINE**, from having been raised at Crickett Park, near Crewkerne. The fruit is large, and in appearance like a large *Violette Hâtive*, but it differs from that variety in having large flowers; and the tree is so hardy, that Mr. Pierce informs us that for the last two seasons, when all the Nectarine-buds in his nurseries have been killed, those of the Crickett Nectarine have withstood the frost. The flesh of the Crickett Nectarine is rich, and of a very fine flavour. Like the *Violette Hâtive*, it is quite red at the stone.

From Mr. Rivers, of Sawbridgeworth, we have received several new varieties, some of which never produced fruit before this season. They were all grown in the orchard-houses in Mr. Rivers' nurseries.

SEEDLING N'BLESSÉ PEACH.—The remarkable character of this variety is that it has round glands on the same

The fruit is medium-sized, roundish, and marked with a shallow suture. Skin covered with a fine down and perfectly pale, except with a very faint trace of colour on the side next the sun, amounting to only clusters of a few dots. The flesh is white, quite pale at the stone, with sometimes the faintest streak of red, but not a tinge, and separating freely from the stone. It is quite white or greenish-white, very tender and juicy. Juice abundant, very richly and deliciously flavoured. A first-rate Peach.

GOLDEN RARE-RIPE PEACH.—This is one of the yellow-fleshed Peaches. It is of very large size, roundish shape, and marked with a deep suture. The skin is pale orange on the shaded side, with a considerable blush of red on the side next the sun. The flesh is deep yellow, and considerably tinged with red at the stone, from which it separates freely. It is very tender and juicy, but with rather too brisk a flavour to be considered desirable. It is a large handsome-looking Peach. The leaves have kidney-shaped glands.

SEEDLING PEACH 5, from White Nectarine.—A large and handsome Peach, round, and with a deep suture. The skin is perfectly white, and has not the least trace of colour upon it. The flesh is also perfectly white even to the stone, from which it separates very freely, not very juicy, and the juice cold, acid, and rather bitter. Glands reniform.

CANARY PEACH.—A fine, large, pale straw-coloured Peach, 2½ inches in diameter, and terminated at the apex with a sharp-pointed nipple. The suture is distinct. The skin is uniformly of a very pale warm yellow or orange, and without any trace of red—indeed it may well be called Canary. The stalk-hole is deep and wide. Flesh separating from the stone; pale orange, very tender and melting. Juice very abundant, sweet and rich, with a delicious, fine, and racy flavour. Leaves without glands. A large, handsome, and most delicious Peach. A first-rate variety.

MONSTRUEUSE DE DOUÉ.—A noble fruit, 9½ inches in diameter, round, and with a suture that passes round the whole surface of the fruit. Skin pale green, mottled all over with thick dottings of red, and with a red cheek where fully exposed to the sun. Flesh green, very deep red round the stone, from which it separates. It is rather firm, solid, and heavy. Juice very abundant, very sprightly, piquant, and racy. A splendid Peach. As a fine market variety this will be invaluable.

HONEY PEACH from China.—A curious ovate-shaped Peach of medium size, terminating at the apex in a sharp long nipple, and marked with a faint suture. The skin, which is covered with a very fine down, is perfectly white, and has no trace of colour on it. The flesh is perfectly white, with just a faint trace of red round the stone, from which it separates freely. It is very tender, melting, and juicy. Juice abundant, quite sweet and delicious, almost like a syrup. A very rich and delicious Peach, quite novel in character, both in appearance and in flavour. The leaves are without glands, and remarkable as being widely dentate. This is a very distinct variety.

TURENNE AMÉLIORÉE.—A good-sized Peach, about 2½ inches in diameter, roundish, and a good deal hammered and irregular in its outline. Skin deeply mottled and clouded with dark crimson almost over two-thirds of the surface, and pale yellow on the shaded side. The suture is merely a faint line, and not deeply marked. Flesh yellow, deep red at the stone, coarse, acid, and bitter. Separates with difficulty, and is not at all a desirable variety. Leaves without glands.

CRIMSON MIGNONNE.—Fruit about medium size, roundish, and rather uneven in its outline, marked with a very faint suture, and pitted at the apex. Skin almost entirely covered with very dark crimson, almost black, as much so as the *Bellegarde*. The little on the shaded side that is not coloured is a pale yellow. Flesh very tender and melting, very much and very deeply stained with blood red at the stone, from which it separates freely. Juice very abundant, rich, sprightly, and deliciously flavoured. This is a very distinct and very excellent Peach. Glands round.

CYANOPHYLLUM MAGNIFICUM.—I have the *Cyanophyllum magnificum* with leaves 25½ inches in length, and 14½ inches in breadth.—**STARKIE BALDWIN**, *Gardener to John Moore, Earl Palace House near Burnley.*

GLADIOLUS DISEASE.

In your Number of August 11th you mention a disease similar to the Potato disease having attacked the Gladiolus near London, and request information as to those grown in the country. Having grown Gladioli for the last twelve or fourteen years from bulbs, not seed, I can fairly answer your question, and state that this year is decidedly the worst I have known.

Perhaps owing to last year's rain our bulbs were not harvested in the best condition, and they were not so robust as usual; but the bulbs this year seem to suffer from two diseases. In one case the old bulb hardly makes any roots, remains very dry, and consequently only forms a small and weakly new bulb, which throws up its head until the flower-spike is on the point of blossoming. It then turns yellow, withers, and dies. In the other case the old bulb rots away entirely, leaving only a weakly new bulb, or perhaps none at all.

I planted my Gladioli this year in three large beds, one manured with rotten dung, one with well-rotted hops, and the other had no manure at all. That manured with hops turned out the best, and I have to thank Mr. Youell for the hint. The other two beds were very bad—perhaps the one not manured was the worst.

The disease is not confined to Gladioli in beds, as I have about twelve lots of seedlings in pots and boxes. Some of these have also gone off; others, last year's seedlings, have blossomed.

I should be inclined to grow Gladioli in peat mould if I could procure it more easily, and to manure only with rotted hops, as some Brechleyensis we have in a peat border are very healthy; but, from having been planted there three years running, have sported their colours.

Can anybody recommend me a good yellow Gladiolus? I have raised many from Ophir; but they are not pure yellow, generally yellow with lilac.—FRED. B. HANKEY, Capt., R.N., Fetcham Park, Leatherhead.

EARLY RIPENING OF MUSCAT GRAPES.

I READ with very great pleasure the account Mr. Thomson gave of his Muscat, and hoped it would have opened a discussion; but as it has not done so, I venture to ask, Has any one found that when the Muscat of Alexandria is grown in bottom heat it sets as well and is not a week behind the Hamburgs?

The time required to mature a crop depends on the heat used, and, with Vines planted outside, on the time of the year. If, then, we place our Muscats in a situation unsuited to them, should we call them late? I think we should say simply, that they are more tender, and that if they have a warm soil with the same top heat as is used for Hamburgs, they may be ripened in twenty weeks.

If some one who has had more experience would give a little information on this subject, I, for one, should be very much obliged.—G. H.

[Whatever may have been the cause of the unusual earliness of the Muscat, which has ripened so long before the other varieties here (Archerfield) for the last three years, it cannot, so far as I can trace the matter, be attributed to any extra bottom heat which has not been enjoyed by the other Muscats in the same house. And in testing it against the Black Hamburg this season it laboured at a considerable disadvantage on the score of bottom heat, in so far as its roots were in a cold, open house, while it was being forced in another vinery along with the Hamburgs, to which bottom heat was applied by fermenting material on the surface of the border. It is not necessary to detail this trial of the Muscat against the Hamburgs, as it can be referred to in the Number of the Journal in which I minutely detailed the whole circumstances.

There are other two matters that strengthen my conviction that the earliness of the Vine was not caused by extra bottom heat. The one was the fact that the Vine was always a weakly grower, which is a result, as far as my experience goes, exactly the reverse of that which is produced by bottom heat. I have found that Vines always grew more quickly and stronger with bottom heat than

without it. The other is, that a Tynningham Muscat, which ripens earlier than the old Muscat, is planted within less than 2 feet of this early Vine, and I cannot well conceive how the roots of the one could have more heat than the other.

The border is so far heated from beneath that I have taken the advantage of a pipe which passes through the middle of the border to another vinery, and have confined the heat from that pipe, and given it every means of disseminating among the open rubble with which the border is amply drained. The whole of the Muscats in this vinery ripen earlier than any that I have ever previously seen, and this I attribute to the bottom heat in conjunction with a lighter soil than Grapes are generally grown in; and I quite agree with your correspondent, "G. H.," that with the aid of bottom heat and the use of a light soil, Muscats can be ripened much earlier than is general, for I have proved the fact—and, more than this, that they can be brought to a pitch of ripeness that is scarcely attainable when they are grown in cold borders and in heavier soils. But this does not account for the disparity between a particular Vine in the same border with others.

Our early Muscat-house, which is the one now referred to, having bottom heat in the border, was started with fire heat on the 20th of January, and the Grapes were quite fit for table the first week in June, which is under twenty weeks, and those weeks by no means the warmest weeks of the year. Now, the difficulty of ripening Muscats thoroughly at a much more advanced season of the year has been yearly demonstrated at the various shows where this Grape has been competed for, and even up to September the complaint of reporters has been that Muscats have been unripe, however large and fine may have been the bunches and berries. In fact, the larger the bunch and the berries, the greater the difficulty of producing at an early season that degree of ripeness with that pitch of amber colour which is both the certain sign of high flavour, and the most essential condition to hanging long in a sound, unshrivelled condition.

There is no doubt whatever that Muscats can be grown into much stronger Vines, that will yield larger bunches, and swell much larger berries when planted in borders composed of a heavy, somewhat tenacious loam, as compared with the produce of lighter soils. In the one case there are produced stronger wood, larger leaves, with fruit and everything on a more gigantic scale, and very pleasing to look at. But just as these conditions are produced, in the same degree is the season of ripening the crop lengthened out, more particularly if the bed of soil in which they are growing is deep, and not very particularly drained. On the other hand, a light, sandy loam not over liberally enriched with vegetable matter, such as dung or leaf mould, produces a Vine of less strength, having smaller foliage and bunches, and berries small in proportion; but the fruit will ripen on such a soil long before that produced under the reverse circumstances which have been described. The fruit will also attain that transparent amber colour tinged with those russet spots which characterise the highest pitch of ripeness, and which is accompanied with that rich Muscat flavour which is present only to a very faint extent in indifferently-ripened fruit.

A light soil, in conjunction with bottom heat, always ripens Grapes earlier than a heavier cold soil; and what might be expected to produce the best Muscats in all respects is a somewhat tenacious loam thoroughly well drained, and efficiently heated from beneath with hot-water pipes. Under the latter conditions there would be little difficulty in ripening them thoroughly in a shorter time than when no bottom heat is applied. But for quick work in securing a well-coloured crop of Muscats, a lighter soil is preferable, although the fruit will not be so large as that produced on the stronger soil.

From recent observations, I am convinced that the border should become something like what might be termed very dry as the ripening process goes on, and that not a drop of moisture should be allowed to fall on the border after the fruit begins to change colour. One of the changes which go on in fruits during the ripening process is the dissipation or decomposition of the water which they attract; and the less of this element there is present to decompose, the more is the ripening process accelerated, and the greater are the

chances of a more perfect state of ripeness; so, obviously, an excess of moisture will retard and prevent ripening, in consequence of the longer time required for its decomposition. To gorge the system of a plant which has its roots in a soil with a low temperature, must, more particularly under so dull a sky as we frequently experience in these latitudes, retard and prevent the ripening of so tender a fruit as the Muscat Grape. The most careful drainage, with the aid of bottom heat, is the foundation for well carrying out the ripening of this Grape, and the precaution of covering the border with glass should be taken, if possible, immediately the ripening process commences. Not the least important agent in the production of early ripeness is a circulation of dry warm air about both fruit and foliage: consequently neither the wood nor foliage should be allowed to become crowded. It is, however, very important to have a large proportion of foliage, but it is by far the best way of balancing this matter to leave a good few joints beyond the bunch instead of stopping at the first or second joint, and allowing the laterals to make two or three leaves, by which means a crowding of foliage is produced, the house darkened, and the chances of high colouring and speedy ripening are lessened. The foliage should just be sufficiently thick to prevent the direct rays of the sun from acting on the fruit.

These remarks, hastily thrown together, in answer to your correspondent, will, I hope, be the means of provoking some discussion on the early ripening of Muscats, the noblest of all our Grapes.—D. THOMSON.]

MANURE FOR FLOWER-BEDS.

"A SUBSCRIBER" having asked "Which is the best manure for a flower-bed on a dry sandy soil on a gravelly bottom?" this article is given, as the question is one deserving more attention than a mere short reply, and as it is not unlikely there may be many to whom the subject may be interesting, especially in seasons like that just passed, when a long period of dry weather sets in during the time of the growth of many of the plants that form the gayest features of the flower garden. As a very dry season and a very dry shallow soil resting on a hungry sand or gravel are at variance with the welfare of most classes of vegetation, it need not be wondered at if some one asks, In what way can such a situation be improved?

Fortunately, the case is not without its remedies, neither are the means beyond the reach of those who are anxious to try to grow bedding plants of most of the best kinds now in fashion. At the same time, be it remembered, there are other plants whose well-being cannot be looked upon as certain in a soil of this kind, as, for instance, Phlox Drummondii, the Alonsoa, Calceolaria perhaps, and some others; while it is not unlikely that some plants will do better in a soil of this nature than in one of a more promising description, and with some judicious alteration many of our flower-gardening materials will do well. A few plain rules to guide the inexperienced in the management of such a place will be here pointed out.

In the first place, it will be necessary to consider the character of the district the garden is situated in.

In the west of England, and in some other situations in hilly localities, the amount of rainfall is about double that of similar places on the east coast. Now, as vegetation while in an active state exists, in a great measure, on moisture, warmed more or less into a proper growing medium, the light shallow soil of the rainy district will suffice to support vegetation there, when the same description of soil is unable to do so in the long droughts more common in the dryer districts. Witness, for instance, the character of the grass lands that a traveller will often meet with on leaving London by any of the great lines of rail passing from its northern or western sides, and supposing such journey to be in August in a dry season, the parched character of the grass lands for the first fifty miles or so will be very apparent, while after that a gradual approach to freshness will be visible, so that when one hundred miles are reached the aspect is quite changed, and in fifty miles more there seems almost a superabundance of herbage. Now, all this may be on lands of a like character, the difference being due to two causes, one the less one being the increased heat of the

more southerly situation, and the other and more important one being the less amount of rain by which the earth is refreshed. Taking, therefore, these two examples, let us see in what way the dry place can be made to suffer less from the drying nature of its climate, and possibly a better state of things may be brought about.

Assuming the situation to be a dry one, and the soil of the flower-beds to be shallow, the first work to be done is to see if the soil can in any way be deepened. Trenching and removing a part of the unkind subsoil will be the most effectual way of doing this, adding, of course, the required quantity of better material to make up the necessary depth. Generally speaking, from 18 to 24 inches is not too much for a flower-bed that is expected to support a heavy crop of flowers all the summer. It is better to deepen the beds rather than raise them above the natural surface. It is also advisable to make the required addition with a stiffer soil than the one found on the surface, in order to retain the moisture somewhat better; for it must be remembered, that a dry gravelly bottom naturally sucks out what moisture the beds placed above it contain. It is, therefore, better as far as possible to prevent this, by adding some clay or other substance unwilling to part with its water; but a regularly puddled-hole, like one intended for a pond to hold water without leakage, is not by any means to be advised, a certain amount of drainage being necessary even for dry substances.

Another mode of benefiting a flower-bed on a dry soil is to add enriching manure, so as to feed the plant by stimulants instead of supporting it by a more steady and regular food. On this principle all plants in pots are maintained, and some do better in that way than when allowed more freedom; but they are the exception, and for the general purposes of cultivation it is a sort of hand-to-mouth system of cultivation, any neglect of supplying the plant with its required food at the right time being attended with bad consequences. However, manuring a plot of dry, sandy, or gravelly ground, is a more durable improvement than merely pouring water upon a potted plant, and it is often done with much advantage to the plant cultivated; and certainly is so with flowers of most of the favourite kinds cultivated in the beds of the fashionable parterre, some of them only requiring a sufficiency of nourishment to carry on the growth for a short period, and they flower all the better by a check being given to their luxuriance. Such, in fact, are most of the kinds of Geraniums of the Scarlet and similar breeds. But as a certain amount of growth is wanted in these as well as others, some stimulating substance is wanted when the ground is dry, and the depth of soil limited; and as the inquirer above alluded to asks what kind of manure is most wanted in such a soil, we may at once address ourselves to this part of the question.

Taking it for granted that the flower-beds formed on a shallow sandy soil on a gravelly bottom were planted at the proper time, and that the showers which followed in June not only kept the plants alive but encouraged a healthy vigorous growth which has continued until the setting-in of dry weather, a check has been given, and, no further growth taking place, the flowering of some such as Calceolarias threatens soon to be at an end. Now the only way to arrest such a premature decay is to supply the ground with liquid manure, not too rich at first, but increasing as the requirements of the plants seem to demand. Observe, I by no means advise a too liberal supply of the rich substance of the farmyard tank or a too strong infusion of guano; but, as the plant seems to occupy the space allotted to it so completely, some additional enriching substance may be given to maintain it in health. Of the kinds of manure water there is much difference of opinion; but the one most disagreeable to deal with is certainly the best in many cases. It must, however, be properly diluted, and its effects will be the more apparent; but all kinds may be used in moderation. The frequent use of clean soft water is also beneficial; and, in fact, whenever manure water is given let this all-important liquid in its pure state succeed it for several times ere the other is repeated. Dahlias, Roses, and the like may be treated to a few doses of this kind and be found the better of them.

With regard to solid manures applied to flower-beds much may be said. Generally speaking, these substances can only

be given in winter when the beds are empty, when farmyard manure may be applied tolerably freely; and we have found this the best kind we have ever tried for Geranium Golden Chain. In places, however, where this rather bulky manure cannot always be applied, a dressing of guano may be of service, or an application of bone manure, wood ashes, or soot; and we have seen much good done by an application of salt to a dry soil of the kind in question. In fact, those manures which in reality are composed of the necessary ingredients that will support the healthy existence of the plants to be cultivated are the kinds to be made use of; and as some of these contain the necessary quantities in a concentrated form, it follows that they may be used with less trouble than the others; but their use in a highly concentrated condition is not to be recommended, for the like reason that the strongest overproof spirits are unfit to be drunk. It is, therefore, advisable in most cases where convenient to give the preference to quantity. Manures, however, in less quantities must not be despised; and, though we have not tried all the kinds now in the market, we may say that guano of one or two kinds is good, as likewise is a sort of blood manure, bone dust, or rather crushed bones, wood ashes, and the charred burnt stuff of the rubbish-heap which contains as much burnt earth as burnt wood. All these and many other manures are good in their way, and so is lime when the soil is stiff and requires it, and for once it is useful on a dry soil; and, as all or most of the above can be given to the plants when in a growing state, by scattering them over the ground and slightly working them in, there is no difficulty in their application. Perhaps the most convenient of all for the above purpose are wood ashes, soot, and guano.

It may be here mentioned that a very useful way of preserving flower-beds from the effects of drought, and also of benefiting them, is to cover them with short dung—such, for instance, as is often gathered up by children on the public roads. This substance, short and not unsightly, may be spread on the bed between the plants, and it will to a certain extent prevent the evaporation of moisture from it, while the first rain washes its fertilising properties into the soil. Mr. Fish uses the old dung from his Mushroom-beds for a like purpose, and I have no doubt with a like beneficial result. The object aimed at is not to prevent the proper warming of the ground by the sun's rays, but to arrest excessive evaporation, which robs the ground of that moisture the crops so much require, and which it is the interest of all good cultivators to retain in time of drought. At another time it may be parted with advantageously; but when the soil available to the roots of plants becomes fully occupied, which it is when closely cropped, it then becomes necessary to husband all its resources, and nothing conduces more to this than preserving its moisture, and, at the same time, giving it more when its wants are so urgent as to call for artificial help.—J. ROSSON.

GARDENS IN GREAT BRITAIN.

I AM glad you have commenced giving a list of the best gardens in the kingdom, and hope your purpose will be ably seconded by those of your correspondents who reside in the different localities. I herewith add my mite to the collection in the form you have adopted at page 9 of the current volume; and as the present month is one in which gardeners are less busily engaged at home than in the earlier summer months, it not unusually happens that those possessing the means take a trip in some direction to see what is doing in other counties. In such cases the lists you purpose giving will be of great service to those not acquainted with the topography of these counties.

In mentioning the gardens recorded below I by no means assert that they are all the best the respective counties contain; but they are such as are worth visiting and such as I am acquainted with. Possibly there may be many others in the respective neighbourhoods equally good, and some better; but, not being acquainted with them, I must leave them for others to report upon. Your remarks on the propriety of admitting gardeners to visit gardens at all times are very good, and I hope you will urge on the employers of gardeners the propriety of providing their gardeners with

the means of visiting other gardens than those in their own immediate neighbourhood. They will in the end be the gainers by such a prudent outlay, for their servant will come home a better and a wiser man. As August is perhaps the least busy of all the summer months, the plan for the journey ought to be laid at once, and its results duly recorded. Subjoined I give a list of some of the gardens I have visited, omitting those mentioned in your former article.—J. Y.

BEDFORDSHIRE.			
Place.	Proprietor.	Gardener.	Town.
Luton Hoe.....	J. S. Leigh, Esq.	Mr Fraser	Luton
BUCKINGHAMSHIRE.			
Cliveden.....	Dowager Duchess of Sutherland	Mr Fleming	Maidenhead
Dropmore.....	Lady Grenville	Mr Frost	Maidenhead
CORNWALL.			
Mount Edgecumbe.....	Earl of Mount Edgecumbe	Mr Poley	Plymouth
Port Elliot.....	Earl St. Germans	Mr Lynch	St. Germans
CHESHIRE.			
Tatton.....	Lord Egerton	Mr Cliff	Ashley
Abney Hall.....	Sir J. Watts	Mr Smith	Cheadle
Eaton Hall.....	Marquis of Westminster	Mr Collinson	Chester
DEVONSHIRE.			
Saltram.....	Earl of Morley	Mr Snow	Plymouth
DERBYSHIRE.			
Chatsworth.....	Duke of Devonshire	Mr Stewart	Rowley
Elvaston.....	Lord Harrington	Mr Barron	Burrowash
HERTFORDSHIRE.			
Woodhall.....	Abel Smith, Esq.	Mr Beale	Welwyn
Panshanger.....	Earl Cowper	Mr Dawson	Hertford
Gorbamby.....	Earl of Verulam	Mr Dogue	St. Albans
Putteridgebury.....	Colonel Sowerby	Mr Fish	Luton
Hatfield.....	Marquis of Salisbury	Mr Burton	Hatfield
Youngesbury.....	W. G. Fuller, Esq.	Mr Terry	Ware
KENT.			
Clipstead.....	Perkins, Esq.	Mr Pryor	Sevenoaks
Cobham.....	Earl of Darnley	Mr Budd	Gravesend
Chevening.....	Earl Stanhope	Mr Coe	Sevenoaks
Earl Sutton.....	Sir E. Filmer, Bart., M.P.	Mr Skinner	Staplehurst
Hunton Court.....	H. Bannerman, Esq.	Mr Goddard	Marden
Preston Hall.....	E. L. Betts, Esq.	Mr Bradley	Aylesford
Linton Park.....	Lord Holmesdale	Mr Robson	Maldstone
Mereworth.....	Lord Falmouth	Mr Todd	Watlingtonbury
Montreal.....	Earl Amherst	Mr Smith	Sevenoaks
Fair Lawn.....	Ridgway, Esq.	Unknown	Sevenoaks
Oxenhoath.....	Sir W. Geary, Bart.	Mr Wicker	Tonbridge
Redleaf.....	W. Wells, Esq.	Mr Cox	Penshurst
Lullingstone.....	Sir P. Dyke, Bart.	Unknown	Farningham
LEICESTERSHIRE.			
Belvoir Castle.....	Duke of Rutland	Mr Ingram	Grantham
LINCOLNSHIRE.			
Belton.....	Earl Brownlow	Mr Ingram	Grantham
Syston.....	Sir J. Thorold	Unknown	Grantham
LANCASHIRE.			
Knowsley.....	Earl of Derby	Mr Freeman	Huyton
Haigh Hall.....	Earl Crawford & Balcarras	Mr Hannan	Wigan
Latham House.....	Lord Skelmersdale	Mr Thorowgood	Burscough Bridge
Worsley Hall.....	Earl of Ellesmere	Unknown	Eccles
SUSSEX.			
Eridge Castle.....	Earl of Abergavenny	Unknown	Tunbridge Wells
STAFFORDSHIRE.			
Trentham.....	Duke of Sutherland	Mr A. Henderson	Trentham
Alton Towers.....	Earl of Shrewsbury	Unknown	Alton
Enville.....	Earl of Stamford and Warrington	Unknown	Stourbridge
YORKSHIRE.			
Studley Royal.....	Earl de Grey and Ripon	Mr Clarke	Ripon
Ripley Castle.....	Inglby, Esq.	Mr Fowler	Ripley

THE GREAT ALOE OF VERA CRUZ.—There is now in flower in one of the conservatories of the Oxford Botanic Garden an unusually fine plant of the Vera Cruz Aloe (*Agave lurida*). It has a flower-stem upwards of 20 feet in height, bearing on its numerous lateral branches many hundreds of pale green flowers, which, although not particularly showy, are of great rarity and interest. The only recorded instance of a plant of this species producing flowers in this country appears to be that which flowered in the Royal Gardens, Kew, in the summer of 1811, and was figured in the "Botanical Magazine," t. 1522. The plant in bloom is of about eighty years' growth, thus going far towards verifying the frequent assertion that plants of this genus (*Agave*), flower but once in a century. This idea is, however, more espe-

cially associated with the American Aloe (*Agave americana*), a kind of not unfrequent occurrence in collections in this country.—(*Oxford Journal*.)

TREATMENT OF *COLEUS VERSCHAFFELTI* AS A BEDDING PLANT.

As with other apparently tender plants when first introduced, various opinions have been entertained as to the adaptability of *Coleus Verschaffelti* for bedding purposes. No one will deny that, as regards the ornamental character of its foliage, it is very desirable for bedding; but that it will ever prove useful for out-door decoration if treated in the same way as *Geraniums*, is a matter about which no doubt can exist.

To succeed with *Coleus Verschaffelti*, cuttings should never be prepared and put in later than the last week in March. They will strike readily; and when struck, pot them off singly as soon as they are sufficiently rooted, taking care not to let them get drawn. When the pots (small 60's are to be preferred), are tolerably well filled with roots top the plants down to six eyes, keeping them moderately dry until they have formed fresh shoots. As soon as the young leaves upon the fresh shoots are large enough to perform the offices required of them, give the plants a slight shift, taking care to pot them firmly. When once started they will grow rapidly. Keep them as before, short-jointed, and again pinch back when the wood is sufficiently matured to break well to four or six eyes, according to the stiffness of the plants, taking care not to make them lanky. Again treat precisely as above, taking care not to give them too large shifts, or make them too wet at the roots. If the cuttings were put in rather earlier than the latest date as given above, it is possible the same process may be repeated. By so doing what would be, when turned out, a month's growth or even more is gained. Bear in mind, however, that it is most essential to have the growth after the last pinching-back well forwarded, so as to be able to place the plants in a light airy place in the greenhouse at least three weeks or, better, a month before turning out. The later the date at which they are turned out the better. It should be the second week in June if possible.

In planting out, if practicable, when single beds of the *Coleus* alone are required, mix with the soil a good proportion of peat and shingly gravel. Let the bed be more or less conical in form, and tread every plant in as firmly as possible. These precautions assist in keeping the plants dry during a wet season, and, besides, they luxuriate in a firm soil. If the summer should prove dry they merely require the soil to be stirred with a hoe.

For contrast, I have found the *Coleus* look exceedingly well, especially when planted out singly amid a groundwork of *Gazania splendens*. The effect when the flowers of the latter are expanded is very good, and the bed has also a more lively appearance when the *Gazania* flowers are closed. It also looks well plant for plant with either of the *Centaureas*, *argentea* in particular, as also with the common *Cineraria maritima*.

Any one averse to this plant, may see two excellent beds of it adjoining the Grosvenor Gate, Hyde Park. They are very pleasing, and reflect credit upon the Superintendent of these grounds. But I know two other plants in this class which ought to be much greater favourites, and to which I intend to refer at an early date.—W. EARLEY, *Digswell*.

CATASETUM FIMBRIATUM.

Syn., *Myanthus fimbriatus* (Morren). *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.

A CURIOUS and very beautiful stove epiphyte. It has ovate elongated pseudo-bulbs, producing lance-shaped blaited leaves. The flowers grow in drooping racemes, on scapes issuing from the base of the pseudo-bulbs; the sepals are narrow, lance-shaped; the petals broader and shorter; the lip heart-shaped, fringed round the margin, produced behind into a blunt spur; the petals are connected with the upper sepal. The petals and sepals are of pale yellowish green, marked with red spots; the lip

creamy white, suffused with rose, in the variety *Heynderyxii*. In another variety—*Legrellii*—the colours are green and white. From Brazil: marshes near the Villa



Franca, province of St. Paul; introduced to Belgium in 1847. Flowers towards autumn. M. de Jonghe, of Brussels. —(*Gardeners' Magazine of Botany*.)

PACKING GRAPES FOR CONVEYANCE TO AN EXHIBITION.

To convey and exhibit a dish of Grapes in three separate bunches, there is no better way than that which is so successfully practised by the metropolitan exhibitors who use a piece of light, smoothly-planed deal of the necessary length and width, having another piece of the same length and about 6 inches wide fixed along one side of it, so that when the two pieces are joined together they present a section something like the letter T laid on its side thus *T*. The whole is covered over with strong white paper by means of glue or paste, and it is then ready for the Grapes. The bunches should then be cut, the best side—which should be uppermost of course—decided upon, and then the bunch should be laid at once on the sloping surface of the board *a*, and the stem of the bunch fixed with a tack and piece of fine cord to the top of the head-board at *b*. Next fix a strong tack between, and on each side of every bunch about 2 inches from the end of the bunches. Then draw a piece of soft tape across each bunch, passing it through among the berries and firmly resting it on the main stem of the bunch. This made secure to the tacks prevents oscillation at the extremity of the bunches, while the fastening to the head-board prevents them slipping down or moving at the top. When they are fixed place them in a square box made sufficiently deep that when the lid is fixed down it clears the Grapes by at least an inch. The sloping position in which the bunches are thus fixed prevents any of the berries from working upwards towards the shoulders, by which means the bloom would be rubbed-off. But though packed with this amount of care the box must be conveyed to its destination with great caution, and not be allowed to be thrown off the level towards the side when the stems of the bunches are fixed.

Certainly they must never be trusted to railway officials or any person who does not know or care for the contents of the box. If only to be conveyed for a short distance, the safest way to do it is to put the box on a man's head and let him walk steadily, or, of course, it can be carried between two men the same as a basket is usually carried.

To send Grapes by rail or any other mode of transit without a person specially entrusted with them and yet preserve the bloom, is an almost hopeless task, and a different system of packing must be resorted to. The best plan that we have tried is to put a layer of paper-shavings in the bottom of the box, then a layer of wadding, then a sheet of tissue paper, on which the bunches are laid. They are then carefully covered over with tissue-paper, wadding, and paper-shavings, the same as that which is placed under them. There must be as much of these materials placed over them as will rest firmly on the bunches when the lid is screwed down, so that all motion of the bunch or berry is prevented. Each bunch should have a compartment in the box for itself, or at most no more than two bunches should be packed in one compartment. Grapes can be sent to any distance in this way, but not without rubbing-off the bloom to a considerable extent. If conveyed by the former method all that is required when the show table is reached is to take out the paper-covered tray of wood which we have described and place it on the table. In the latter case the bunches must, of course, be removed from the box and dished afresh.—D. THOMSON.

WELL HEAD GARDENS, HALIFAX, YORKSHIRE.

Few persons entertain an opinion that there is any gardening worth seeing in or around our great seats of manufacturing industry. Our trees are represented as hidebound and incapable of expanding because of the smoke, and our gardens as containing nothing worth going a mile to see. Speaking for myself, I may say I have been in the valleys, by the side of the brooks, on rocks, in caves, passed from dells to hills, and from the mountain-top scanned Nature in all her loveliness, and seen her adorned in all those localities; but in no place nor position has it fallen to my lot to see her better assisted, nor her beauties stand out more nobly in the limited area of a suburban residence, than at the Well Head Gardens belonging to J. Waterhouse, Esq.

Well Head is situated about a mile from Halifax Station, about half a mile from the centre of the town. The gardens are enclosed by a rather high wall and are open to the south, towards which the ground slopes gradually, but still has an undulating surface.

I will enter this enclosure with my friend Mr. Baynes, the clever gardener, presuming that the reader may do so at any time if he feels disposed. Here I will observe, too, that the first objects I notice on entering a garden are the walks, the disposition of the ground, and the variedness of the arrangement. The walks here are formed of asphalt and spar, and are so smooth as not to cause any annoyance even to the feet of an invalid, but not so smooth as to be slippery. The ground is advantageously disposed, and the whole so arranged that but one feature can be seen at a time—in fact, it is just the sort of place where every corner brings you to a halt. It is a place where the alpine finds a home, the herbaceous plant a nest, and exotics find a comfortable resting-place.

We had scarcely entered the gardens before we met the proprietor, who is not only a man of science, but free, liberal, and kindhearted. Mr. Waterhouse gave one of the best reasons for the failure of Apricots in some localities that I have yet heard. It was simply this—"the soil is unsuited to their growth, and that success in Apricot-culture is more dependant on the geological strata than on the skill of cultivators. Where an Apricot thrives, fruiting profusely every year, a Rhododendron does not luxuriate. Lime in some shape is one of the components essentially necessary for the Apricot tree, but in what way it acts is as yet unknown. All, or nearly all, artificial soils made for Apricots fail to remove the predisposition of the tree to gumming or cankering, and no one, except those having the soil in which the Apricot thrives naturally, has succeeded in obtaining fruit annually

in pots or planted-out in an artificial or natural climate. Rhododendrons will not thrive on limestone; but limestone, in some shape or other, is necessary for Apricots to succeed."

Passing some rockwork crowded with trailing and alpine plants, always more or less interesting, where plants of *Osmunda interrupta* and *regalis* were thriving out-doors, a Fern-house, 30 feet by 18, first engaged my attention. The house is furnished with stone shelves, which, owing to their porosity, are calculated to absorb water, and give it off when the atmosphere of the house becomes drier than the stones, and that assists in keeping up a moist atmosphere in which Ferns revel. Out of a large collection the names of a few may be given as being conspicuous amongst their neighbours. *Asplenium bifidum*, a capital dinner-table plant; *A. formosum*, growing about a foot high; *Acrophorus chærophyllus*, with creeping stems and finely-divided fronds; *A. pulchellus*, var., a fitting companion for *Pteris scaberula*; *Davallia polyantha*, with creeping stems like the rest of the genus, but having handsome rosy fronds whilst young; *Gymnogramma gracilis*, a fine variety; *G. pulchella*, more powdered than generally seen; *G. peruviana*, 3 feet across; *G. chrysophylla*, richly powdered, and deeper in colour than many varieties of this species, of which *G. chrysophylla aurea*, a stronger grower, is paler in colour; and the woolly-fronded *G. lanata*; *Lonchitis pubescens*, a scarce and handsome kind, with pinnae not unlike an oak leaf; *Pteris natalensis*, something in the way of a gigantic *Adiantum trapeziforme*, but with handsome pale green fronds; *G. lutea*, looking like a cross between *G. peruviana* and *G. chrysophylla*, with the habit of the last; *Litobrochia nobilis*, much in the way of *L. (Doryopteris) sagittifolia*, but with a white mark or blotch in the centre of the frond, which is about an inch wide at the setting-on of the frond with the stipes, and tapers off in proportion to the length of the frond, generally extending from the stipes to three-quarters the length of the frond; *Nothochlæna nivea*, 1 foot 6 inches high and 2 feet across; *N. tomentosa*, vestita, &c., in fine condition; *Cheilanthes hirta Ellisiana*, 2 feet across; *C. viscosa*, and many more of this fine genus in robust health; *Cibotium barometz*, 8 feet high and 12 across, growing in a tub; *Blechnum corcovadense*, with a tree-like stem over a foot in height and a head 8 feet in diameter—the fronds of this variety being a beautiful bronzy pink whilst young, which is retained till nearly mature. *Brainea insignis*, rosy crimson fronds when young, with wavy divisions—an exceedingly handsome variety from Hong-Kong, has a massy tree-like stem—the plant was 4 feet across; *Lastrea opaca* is very fine; *Todea pellucida* was growing in a well-drained pot in fibry peat, the pot in a pan of water, and the plant with a glass over it; and *Goniophlebium subauriculatum*, in a basket suspended from the roof, with fronds 10 feet long, nearly reaching to the floor.

We scarcely step outside and take a breath of fresh air before we pass into ainery 57 feet long by 18 wide, which is divided into two compartments. The Vines are planted outside; but the border has been covered with glass to remedy the non-ripening of wood, which it has done effectually. What a nice place this covered border would make to winter bedding stuff! Prior to covering the border with glass the Vines did very indifferently, and Grapes coloured badly, but they now colour well. Under the Vines were several Ferns—as *Cibotium Scheidii*, 10 feet through; the beautiful *Adiantum chilense*; the Fingers-and-Tongue Fern, *Dictyoglossum crinitum*; *Angiopteris evecta*, with fronds 9 feet long, and the plant 10 feet in diameter; *Polystichum triangulum*; *Asplenium polyodon*, and *A. pumilum*, with a host of other varieties. Besides Ferns, there were also *Selaginellas atro-viridis*, *erythropus*, *rubricaulis*, *Wallichii*, and *Lobbi*, all conspicuous for their Fern-like habits. In addition to these were a full collection of Lycopods, and amongst other things *Punica granatum* in fruit, and *Stenochlæna scandens* in a pot looking for a wall. The back part of one division was covered with the Night-blooming *Cereus*, and a large collection of Cacti on a broad shelf at its feet. In a glass was *Vallisneria spiralis*, in which you watch the flow of the sap with the microscope; and *Caria vulgaris*, another microscopic object, both, of course, immersed in water. Stepping outside, a border filled with Stocks, Asters, &c., looked well.

The Rhododendron-house is the next we come to. It is

span-roofed, 100 feet long, 21 feet wide, 8 feet high at the sides, and 18 feet in the centre. It is heated by hot water, and kept at greenhouse temperature. It is ventilated at the top and sides. There is a shelf about 2 feet wide all round, on which plants in pots are grown; next to this is a wide path, and a bed in the centre in which Rhododendrons are planted, being chiefly Sikkim and Bhotan varieties, though some of the finer British hybrids are introduced. In the centre of the house a fountain is continually playing, and imparts a cool and refreshing character to this delightful promenade. Of Rhododendrons from Sikkim there were Aucklandi, argenteum, Dalhousie, Edgworthii, Falconeri, Hodgsoni, Thomsoni, Wighti, and Wallichii; and of Bhotan—Boothii, Hookeri, Kendrickii longifolium, Nuttali, virgatum, album, Windsorii, leucanthum, &c., most of which have flowered, and are now studded with buds for another year.

In the same border were *Acacia affinis*, touching the glass; *Berberis nepalensis*, 10 feet high; *Lomaria ferruginea*, the same; and *Theophrasta imperialis* growing like a willow. In pots were *Acrophyllum venosum*, 4 feet by 3; *Acacia lineata*, 5 feet by 4; *A. Drummondii*, 4 feet in diameter and feathered to the pot; *Ceratopetalum gummiferum*; *Philesia luxifolia*, good plants; and very many specimens of greenhouse plants representing almost every genus of hard-wooded plants from temperate climes. *Desfontainea spinosa* was in flower, the scarlet bloom contrasting well with the holly-like foliage. *Eugenia Ugni* does extremely well in this house, giving some fine peculiarly-flavoured fruit. A large *Camellia* (double white), literally bristles with flower-buds. Last winter it had more than eight hundred blooms expanded upon it at one time. It is about 12 feet in diameter and 10 high. But the greatest charm of the Rhododendron-house is the beautiful collection of British and exotic hardy-Ferns. They are placed on the north side of the house and so receive a certain amount of shade from the shrubs that are planted in the border. The collection is replete with every known distinct variety, and I would advise hardy-Fern-lovers to take the earliest opportunity of seeing this charming collection. Amongst them were *Blechnum L'Hermieri*, the best of the rosy-fronded species, and it, with *Lomaria Patersonii*, is first-rate for the dinner-table; *Adiantum pedatum*, a deciduous species, but now second to no Maiden-hair in cultivation, the plant was 3 feet through; *Blechnum spicant ramosum*, with the ends of the fronds crested; *B. spicant imbricatum*, having the appearance of a double-fronded variety; *Scolopendrium vulgare marginatum papillosum*, with pocketed pinnae, and a legion of other multifid varieties of this beautiful genus; *Polystichum Crawfordii*; *P. aculeatum densum*, very fine; *P. angulare Footii* and *cristatum*, adjoining which is a mass of *P. lonchitis* from the Highlands. *Athyrium multifid* in all ways and fashions were here, some with beautiful plumes, others with tassels, of which *Frizelliae* and *Fiedlii* (Ivery's), are fine; also, the rare *Woodia ilvensis*, worse to get hold of than to grow; *Mohria millifolia*, very like a Yarrow; *M. thurifraga*, and the exceedingly handsome *Lastrea Filix-femina plumosum*; a mass of *Asplenium trichomanes incisum*; regular clumps of *A. Hallerii* and *A. fontanum*; pots full of *Hymenophyllum unilaterale* and *H. tunbridgensis*, both in sphagnum, bits of freestone, and fibry peat; the pots in a pan of water, and a bell-glass over the plants, which is taken off and wiped inside occasionally, but replaced immediately. *Trichomanes radicans* was growing luxuriantly in pieces of freestone, fibry peat, and a little of the infallible cocoa-nut stuff intermixed. The pot of this also stands in a pan of water with a bell-glass over it to secure a moist atmosphere. I cannot leave this beautiful collection without recommending everybody to go and see it. It alone will amply repay a visit, for the few I have named are but a speck in comparison to the whole.

Leaving the Rhododendron-house, our way is down a gentle declivity, with Azaleas and other shrubs to the right and left, and alpine or herbaceous plants in every nook, but presently we come to the long walk which is gay with annuals and very fine Digitalises; behind which, to the left, is a row of *Araucaria imbricata* and *Cedrus deodara* alternately. The trees were raised from seed about twenty-four years ago, and have now attained 12 feet in height. The other side of the walk is planted with Rhododendrons, Azaleas, and other flowering shrubs, the soil of the garden suiting Rhododendrons and their associates, and on many

plants the buds may be counted by the thousand. This walk, as may be imagined, is one blaze of bloom in early summer. No one would imagine that behind the *Araucarias* and *Cedars* is a plot of ground devoted to the growth of vegetables; but such is the case, and some very creditable work in that way is done. Still glass, the prevailing feature, again demands attention.

There is a Melon-pit 62 feet by 8, with a walk along the back, and a raised bed in front, on which fine-flavoured and large Melons are grown. There are hot-water pipes for top and bottom heat. The surface of the bed is about 1 foot from the glass: consequently the vines or shoots run on the surface, thereby saving a trellis and much trouble in tying. Although the majority of the fruit had been cut, there were some remaining, convincing me that hot water is a first-rate system of growing Melons. The sorts most in repute here are Golden Perfection, Emperor of China, Orion, and Excelsior.—G. A.

(To be continued.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

As young weeds will now begin to appear thick and fast, the hoe should be kept actively employed on all favourable occasions to cut them down. Also hand-weed the seed-beds; for if neglected for a week or two the weeds will overrun and seriously damage them, and then increase the labour of removal tenfold. *Cabbage*, plant the principal crop of spring Cabbage on ground well manured, as previously directed. The East Ham is a good variety for standing over the winter, it is not so apt to run in spring as other sorts. Prick-out into beds, a few inches apart, a large quantity of Cabbage plants which have just expanded their first two rough leaves, they will be required in spring. *Cauliflowers*, prick-out the young plants as soon as they are sufficiently large to fix properly in the soil. Some may be pricked into a sheltered border, and some into frames. *Lettuce*, make the last sowing for the season of Brown Cos and Hardy Green on raised beds of light soil where they may remain till spring, and be planted-out to succeed those that are transplanted this autumn under walls, &c. *Mushrooms*, the time has now arrived when they may be grown with the greatest probability of success. Although to some it may appear an easy task to produce them at all seasons, nevertheless for the great majority of growers a limited supply will be sufficient, when advantage can be taken of the natural warmth of the season to grow them with the least expense of labour and of time. The bed to be made of fresh warm stable-dung that has been prepared for a fortnight or three weeks by forking it up into a heap, removing all the long straw and litter, and turning it over every two or three days until the rank steam has passed away, and the whole is in a mellow condition and of equal consistence throughout the heap. If during this time it has been kept dry, it will now be fit to be made into a bed 4 feet wide by 3 or 4 high and any length that may be required, about the same shape as a Potato-pit or the ridge of a house. A great portion of the success will depend upon the firm manner in which the bed is built; this is generally done by beating with a three or four-pronged fork as solid as possible, the top when it is reached to be about 6 inches wide. Watch-sticks to be put in the bed and allowed to remain until the heat, which is known by the feel of the watch-sticks, has declined to a milk-warm state, when the bed will be fit for spawning. The bricks of spawn to be broken into moderately-sized pieces, inserted about 2 inches within the surface and about 5 or 6 inches apart all over the sides and ends of the bed, to be well beaten in with the hand. In a week or ten days the bed will be fit to be covered all over, 3 inches deep, with good sandy loam; or, if no better can be had, any good garden soil to be put on with the hand, well pressed and occasionally knocked-in a little with the back of a spade, to be covered about 6 inches thick with dry hay or straw. The bed should be made in a dry sheltered situation, on level ground. In some low situations it is advisable to lay some brushwood at the bottom, and cover with a little long litter on which to build the bed. The watch-sticks, when they feel nice and warm, will give the best clue to the proper time for spawning

and for covering over the bed, and also when to supply or withhold the external covering of hay or straw. Let it be watered occasionally when the surface becomes dry, and in cold weather with tepid water. Onions, pull up those that have done growing, and house them in a dry state. They should be sorted before being laid away in the root-cellar, and thick-necked ones used first. Embrace the opportunity of a wet day to string the Onions, to tie-up and arrange herbs, and to beat out and clean the seeds of any favourite vegetable that may have been saved.

FLOWER GARDEN.

Continue to plant-out Pinks, Clove Carnations, &c. See that the plants already established in beds are kept in a state of health and vigour by stirring the surface of the soil. Look now and then at the late-budded Roses, and loosen the ligatures when necessary. Borders deficient of Snowdrops, Crocus, Narcissi, and other such early spring-flowering bulbs should have some introduced.

FRUIT GARDEN.

Fruit, as the Apple and Pear, will now be ready to gather in rapid succession, having come to maturity earlier this season than usual. Great care should be taken with them to prevent their being bruised. The best and most handsome fruit only should be stowed away, the rest will do for present use. When gathering, take care not to break off the fruit-spurs. Give Grapes on Vines against walls the full benefit of the sun by taking away a few of the leaves which shade them.

GREENHOUSE AND CONSERVATORY.

The weather has assumed a more favourable aspect, and many may hesitate in the work of introducing the house plants while the promise of a late summer is before them. It is dangerous, however, to trust anything to the weather at this period of the year. Cloudless days are very delightful, and thrice welcome just now; but it sometimes happens that they are succeeded by clear nights, when nipping frosts occur: therefore the kindly work should proceed uninterruptedly. Let a scrupulous examination be made of the condition of each plant, and defects in the soil or drainage of the pots at once remedied. Clear off moss, remove insects, and replace stakes. The ordinary precautions for obtaining a supply of common flowering plants throughout the winter months should be commenced and progressively continued. Violets to be potted or planted in a frame; Mignonette thinned and sown; Hyacinths, Tulips, and other bulbs potted and plunged; Pinks for forcing encouraged; and Cinerarias duly attended to. Roses in pots should occupy a fair share of attention. The Chrysanthemums to be taken up from the open ground, to be potted in any good soil, watered, and shaded for a few days. The system of growing them in the open ground saves immense labour in watering, and, after all, it is rare to see them in pots well feathered with foliage to the bottom; but by the open-ground system they require but the small attention of stopping occasionally; and when they are potted, even if left in the open ground until the flowers are expanding, they will not lose a leaf.

PITS AND FRAMES.

Some cold frames should now be put in readiness for the reception of alpine plants in pots, especially the more delicate species, to remain for the winter, or it is the destruction of this humble but interesting class of plants. Bear in mind they must not be covered with the lights during fine weather, but only in times of rain. Continue to get those structures which may have been used for horticultural purposes during the summer months in readiness for winter stock, by whitewashing the walls, cleaning the flues, &c. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

GENERAL routine much the same as last week. Planted out all spare ground with Broccoli, Scotch Kale, Brussels Sprouts, Savoy, and Cauliflower to get a little protection. Took means for protecting on an emergency a nice bed of Dwarf Kidney Beans now coming into bloom. Sowed some in pots out of doors, to be moved under glass as the weather gets too cold for them. Pulled up the late Onions, and put them under cover to

dry, and the stringing of them will be a job for a wet day. Scattered lime, and wood ashes, and soot over late sowings of Lettuces, Cauliflower, &c. Pricked out Cabbages for the earliest spring crops. Sowed a small pinch to stand the winter. Earthened-up Celery fully in a dry day, having three-parts done it a fortnight ago: this will be our second lot. Reasons were lately given why the bit-by-bit earthing should not be proceeded with. No ground better for the main Cabbage crop than where Onions have been grown. The ground, however, to be well stirred; and if fresh manure is given, that to be placed in the bottom of the trench, and some of the surface rich soil left again for the young Cabbages to root in. Though Cabbages thus succeed Onions well, the opposite rule will not hold, for Onions are almost sure to fail if they succeed Cabbages that have stood long on the ground. Pulled Cucumbers out of large pots that were doing little good, though the reason why is a mystery. Younger ones in a bed are bearing beautifully. As stated the other week, this at present is our main sheet-anchor against disease and failure. Every pot was filled with a different soil or combination of soils, and there was not a pin to choose between them. Those planted out in the pit are in rich soil, and as beautiful as can be, and bearing fine fruit; but so did all our Cucumbers until about the end of June, and since then hitherto in succession they have been less or more affected. Spawned and earthened-up the first bed of Mushrooms in the Mushroom-house. Have seen some handsome Mushroom-houses of iron and slate of late; but after all, from what comes before us in the way of complaint, we come to the conclusion that the want of success is chiefly to be traced to three things—bad spawn, overheating, and overworking or overdrying of the dung. Too much wetness is also to be avoided; but when the matter was so wet that moisture could almost be squeezed out of it, we have had fine Mushrooms from wrapping each piece of spawn in a good handful of short dry litter before inserting it in the bed. We like to see good structures for all work; and gentlemen should show the example of having nice, solid, and lasting buildings for all that is needed about their establishments; but at the same time more humble people may do much with more humble means. We know a farmer who supplied his friends and himself liberally with Mushrooms from Christmas right on to June at any rate from a bed in a stable, and a doctor has just been a little less successful from a bed in a disused stall of his stable; and, as stated the other week, Mushrooms may be had under the most simple arrangements, though the greater the means the less excuse for failure when it comes. Cut off the larger leaves from Tomatoes, that the sun might have more power to ripen the fruit; and placed the pots of Capsicums and Chillies more in the sun, that the fruit might be well hardened for grinding for Chili pepper, as it is said that a good portion of what is sold is made up of red lead; but perhaps it is all a story.

FRUIT GARDEN.

Gathered fruit as it ripened. It is better to get Peaches, Nectarines, the finer Plums, and even Apples before they are so ripe as to drop. A Peach gathered a few days before dead ripe and kept in a dry place, not too cold, will, when used, be in a finer state, as to flavour and softness throughout, than when allowed to hang on the tree with one side rather ripe and the other side rather under-ripe. We have seen Peaches placed in a cool place to keep them, but it always injured the flavour. Nipped shoots of fruit trees as needed, to swell the buds near home. Gathered some good Figs out of doors, never did this so early before; the house still giving a few each day. Those who grow Pines must be careful not to check them now in their growth. Those showing and in bloom should have more heat and air to cause them to come strong and robust. Gave more firing to vineries to keep the growth in a healthy state, and more air to prevent damping in these dull days and wet weather. The borders outside being rather dry, have allowed the rains free access. If it had not been so would have protected the earliest house from heavy rains. Syringed all the Peach trees on trellis or in pots done fruiting, with sulphur water to clear away any vestige of red spider. Went over Strawberry plants in pots, taking out every weed and cutting off all incipient runners, and placing the pots a little further apart, so as to give them more room for the autumn sun to rest upon them.

ORNAMENTAL DEPARTMENT.

Fresh dressed conservatory. Mowed and rolled lawn and walks. When very wet scarcely any walk is so hard but it will leave traces of feet behind. Some folk seem to feel a pride in thus spoiling a beautiful surfaced walk. In a fine day you will never see them put a foot on it; but only let us have a few wet

days, and every fair moment out they will come and perambulate backwards and forwards as if a task were assigned to them to make as many marks as they could with hob-nailed shooting-boots. Perhaps it gives them a pleasure to notice the trouble there is in taking out all such marks before the walk can be at all presentable. It matters not that there are stone walks and walks with rougher surfaces; they must choose the smooth walk, just because there they can leave their marks behind them. Just on this account alone we would almost as soon see a drove of pigs in a pleasure ground as some good people in a wet rainy day. If there is a smooth soft place in the walks be sure they will find it out, and leave as many marks as if they had been dancing a hornpipe on it. Went on as fast as we could with propagating Geraniums, and with picking and freshening the beds; and as in the ribbon-borders the fine double Grandiflora Feverfew was much injured by the dry weather, have cut the most of it out, and drawn the Perillas and the Trentham Rose closer together; and as they are both strong the loss of the Feverfew is not noticed, farther than the white told well between the rose and the purple.—R. F.

COVENT GARDEN MARKET.—SEPT. 5.

All kinds of fruit and vegetables continue very abundant, and well-fruits is especially so. Grapes and Pine Apples are sufficient for the demand; of the former the prices for some of inferior quality rule rather lower than last week; but the best qualities fully maintain their prices. Of Melons there is a good stock, both of British and foreign. Pears consist chiefly of Williams' Bon Chrétien, and Beurré d'Amanlis; of the former there is a large supply. Filberts are still rather short, and prices are rising. Some good Cobs have made their appearance at from 45s. to 50s. per 100 lbs. The Potato market is still heavy. Flowers consist of Orchids, Pelargoniums, Verbenas, Dahlias, Asters in abundance, Stocks, Fuchsias, Calceolarias, Mignonette, and Roses.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	0	0	Nectarines doz.	1	0	5	0
Apricots doz.	0	0	0	0	Oranges 100	10	0	14	0
Pigs doz.	2	6	3	0	Peaches doz.	1	6	8	0
Filberts & Nuts 100 lbs.	50	0	7	0	Pears bush.	0	0	0	0
Grapes, Hamburgs, lb.	1	6	5	0	dessert ½ sieve	2	0	5	0
Muscats lb.	3	0	6	0	Pine Apples lb.	3	0	6	0
Lemons 100	12	0	16	0	Plums ½ sieve	3	0	5	0
Melons each	1	6	4	0	Quinces bush.	0	0	0	0
Mulberries quart	0	6	0	9	Walnuts bush.	14	6	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad bush.	0	0	0	0	Leeks bunch	0	0	0	0
Kidney ½ sieve	1	6	3	0	Lettuce score	1	0	2	0
Beet, red doz.	1	0	1	6	Mushrooms pottle	1	0	2	0
Broccoli bundle	0	0	0	0	Musd. & Cress, punnet	0	2	0	3
Cabbage doz.	0	9	1	3	Onions bunch	0	4	0	6
Capicums 100	0	0	0	0	pickling quart	0	6	0	0
Carrots bunch	0	6	0	8	Parsley bunch	0	8	0	4
Cauliflower doz.	2	0	5	0	Parsnips doz.	0	0	0	0
Celery bundle	1	6	2	0	Peas bush.	0	0	0	0
Cucumbers doz.	2	6	7	0	Potatoes sack	5	0	9	0
pickling doz.	0	8	1	0	Radishes doz. bunches	1	6	2	0
Endive score	1	3	2	6	Rhubarb bundle	0	0	0	0
Fennel bunch	0	0	0	0	Savoy per doz.	0	0	0	0
Garlic and Shallots, lb.	0	8	0	0	Sea-kale basket	0	0	0	0
Gourds & Pumpk., each	0	0	0	0	Spinach sieve	1	6	2	0
Herbs bunch	0	3	0	0	Tomatoes ½ sieve	2	6	5	0
Horse-radish ... bundle	1	6	4	0	Turnips bunch	0	3	0	6

TRADE CATALOGUE RECEIVED.

J. C. Padman, Providence Nurseries, Boston Spa, Tadcaster.—Select List of Bulbs, Hardy Ferns, and Roses. 1883.

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

B.—Many questions must remain unanswered until next week.

SEEDLING POTATO (W. J. Epps).—Your seedling Potato boils to a perfect

VINE LEAVES BLOTCHED (S. G.).—Your Vine-leaf appears to us to have been blotted through allowing water to stand on the leaves when the sun was shining powerfully upon them. We rather suppose that your border is a very rich one, and that growth is consequently induced at a time when the wood should be ripening. Keep the atmosphere drier by giving abundance of air; and if any syringing be done, do it early in the afternoon, leaving a little air on all night, which will aid in keeping the atmosphere of the house pure, and in preventing water lodging on the tips of the leaves. If the sun strikes any leaf on which water has stood some time it cannot do otherwise than discolour it by carrying off its juices as well as the water on the leaf; and with the loss of the juices the leaves contract or curl in proportion to the quantity lost.

KEEPING GRAPES (West House).—If you do not care about wintering any plants in the house Grapes keep longer without shrivelling on the Vine than when cut; but in houses where plants are wintered it is better to cut them off with a few inches of wood attached about the time the leaves fall off, searing the end with a red hot iron, and then sealing it up with sealing-wax. Hang in a dry room, and cut out all decayed berries, examining frequently for that purpose. If you prefer keeping the Grapes on the Vine, not even a plant requiring water should remain in the house; but by admitting air and using firing in the daytime keep the atmosphere pure and dry. When pruning time arrives prune those branches on which the fruit is hanging by taking out all the eyes except those which should be left for growth in the following season if the Vines were pruned in the ordinary way; then leave the branches alone until the eyes have fairly broken, when they may be removed, as there is then no danger of bleeding. They are sure to bleed if cut off at the time the Grapes are cut, if these be allowed to hang much after the turn of the days.

STOVE CLIMBER (A Subscriber in the North).—Instead of one there are half a dozen to choose from. Thunbergia Harriet, purple; and T. laurifolia, of the same colour; Schubertia graveolens, pink bluish, and sweet-scented; Allamanda violacea, violet; Hemfeya scandens, cream and spotted; and Mandevilla suaveolens, white, very fragrant.

KIRTLAND'S BEURRE PEAR.—PROPAGATING CENTAUREA ARGENTEA (J. F.).—This is an American Pear raised by Dr. Kirtland, of Ohio. You will not find it first-rate in this country. It ripens in September. Centaurea argentea may be propagated at this season by small side shoots slipped off when about 3 inches long, and inserted round the sides of a small pot, and all the leaves removed except two or three of the smallest at the point. If the plants are in pots it will be best to keep them as they are till the end of February. Then place them in a heat of 60°, and strike the young shoots when 2 or 3 inches long in a mild bottom heat.

GUANO WATER (A Subscriber).—Half an ounce to a gallon of water is strong enough for potted plants, and 1 os. to the gallon for plants in beds.

EUCHARIS AMAZONICA (Novice).—The treatment is more simple than that of a Hyacinth or Tulip, and it is very difficult to prevent its blooming. It is a stove bulb with very thick leaves; and all stove bulbs with stout, fleshy leaves like a start for the yearly growth in moist bottom heat from six weeks to two months, and the bottom heat to be just 10° hotter than the heat of the air for the leaves. From 76° to 75° is the right bottom heat for this charming plant, and for ninety-nine out of every hundred of such stove bulbs, and, of course, 10° lower for the air of the pit or hotbed after the middle of March. Between January and March, if any such bulbs are put to forcing, the top heat must be 15° lower than the bottom heat; but Eucharis will do and bloom without this start. The grand secret with all of this kind of stove bulbs is to have them cooler in the winter and in the height of summer than common stove plants. Fifty-five is the very highest degree any one of them should ever get from October to March; from March to June, bottom and top heat as above; and from June to the end of August, a well-aired greenhouse is the right place for them, and all the evergreen ones, like this Eucharis, to be in the stove, with abundance of air, and not much moisture, in September.

POKE (B. A. S.).—It is the Virginian Poke, Phytolacca decandra, of which, in North America and the West Indies, the young shoots are cooked and eaten as Asparagus and the young leaves as Spinach. When the plant becomes matured it is purgative and emetic, two spoonfuls of the juice purging actively. The berries stain an intense purple colour, and are used in colouring wine. They are said to be narcotic; the root is also so, and powerfully emetic. We would not recommend you to use it as Spinach.

SEEDLING HOLLYHOCKS (E. Miles).—Your young plants pricked out 4 inches apart in a bed are sure to flower well next year. They will be strong bushy plants by March, when they may be removed to their final position. If the winter be unusually severe, a little Pea-baum or something of that kind might be thrown over them at the time, but it is not likely that they will require it. The only danger is when they are in a fast-growing condition at the time severe frost sets in. If growing in an exposed place this is not likely to be the case.

WINTERING SEEDLING PELARGONIUMS AND CARNATIONS IN A COLD FRAME (E. Miles).—We fear the damp will be fatal to your Pelargoniums; but if you could contrive to keep them in some airy room, even if not very light, for a few weeks in the duller part of the winter—say from the middle of December to the end of January—they would do afterwards in the cold frame, if protected at night as you mention. The Carnations will take no harm; but you must gradually harden them off so as to plant them out in March, otherwise they will become drawn.

PLANTS BY POST (North Britainer).—No authority is needed. We have sent small plants and cuttings by parcel post. Of course you would not send balls of earth, much less flower-pots, for you pay according to weight.

COLOURED PLATES OF FLOWERS (N).—We do not know any but these in Mrs. Loudon's quarto volumes. As you object to periodicals it is needless for us to name any.

MILDEW ON ROSES (A. S. A.).—Mildew on Roses may be prevented by syringing them with a decoction of laurel or elder leaves, and it may be removed by dusting the infested parts with flowers of sulphur. Mildew is caused by a peculiarly diseased state of the plant infested, but what that peculiarity is remains an unsolved problem. See to the roots of your Roses, and ascertain if there be no stagnant water near them. Perhaps they are deep in the soil and produce long gross growths; if so, lift them in the beginning of November, and if the ground is wet drain at once. Measure them if weak, pruning more closely than when vigorous. Mildew on Vegetable Marrows is successfully removed by dusting the leaves and stems with sulphur.

LOSS HEATHEN FOR THATCHING (C. Ellis).—About Bagshot and Woking we think you might obtain some; and if we required any in that neighbourhood, we should write to some of the nurserymen there and ask them to tell us how best to obtain the Heather.

BOOK ON MUSHROOM-CULTURE (W. R. J.).—We know of no good separate work on Mushroom-culture since Abercrombie's, "The Garden Mushroom," published sixty years since. It is only met with at second-hand book-shops.

WEEDS ON LAWN (T. W. C.).—The way to have a clean lawn is to root up all weeds as fast as they appear. Root up Daisies, Plantain, Dandelion, with the weed enclosed, at once. Never heed what people tell you about their appearing in greater force. It is new to hear of Plantains growing again when once removed, or Daisies either. It is tap or fleshy-rooted plants that have the power of forming eyes on the root after the top is removed, as Dock, Dandelion, and Thistles; but even these soon perish if the top be removed immediately after its re-appearance. Cut up the Dandelions with a long-bladed knife as much below the surface as possible, removing Plantains, Daisies, &c., with a common grubber, and serving Ranunculus repens the same; but the weed enclosed must be pulled up with the hand. Perist in this—digging up Dandelions with the knife, grubbing up Plantains, and pulling up the weed and grubbing up the roots, and you will find patience and perseverance will be well rewarded; but you must not let them get ahead or the weeds will become re-established. There is no plant that can exist without an annual production of leaves; and if you keep the weeds on your lawn grubbed up as fast as they appear you will find they must perish as they do elsewhere. Manure by all means between now and next March, and in May sow Clover as you propose, but instead of white let it be the Buckling Clover (*Trifolium aliforme*), adding a few pounds of *Festuca ovina*, *F. tenuifolia*, *Bucetum pratense*, and *Anthoxanthum odoratum*; or obtain a few bushels of lawn mixture, to be had of any nurseryman, and sow it early in April, rolling the lawn immediately after. As you object to manuring the lawn, mix a ton of lime with four of rich soil, and apply this half an inch thick during dry weather in March, which is a ready way of killing moss, besides forming a capital medium for the grass seed to vegetate in. Harrowing is not necessary, a good rolling being sufficient to fix the seed of grasses.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (*Easton City*).—The white flower with Fern-like leaves is the *Spiraea filipendula*, commonly called Dropwort. This plant and its varieties are ornamental border flowers, particularly the double-flowered kinds. It is very frequently found growing wild in woods, thickets, and upon chalky downs. The Fern is *Asplenium adnigrum*, a very pretty dwarf-growing hardy kind. It delights in loam and peaty soil when planted in a shaded situation. The leaf is from the *Diclytra spectabilis*. The reason you could not find the name under which you had it in any book on plants is that the name was wrongly spelt. You will find the name of this beautiful plant in the "Cottage Gardener's Dictionary," with an excellent account of it too. Although we have it so very fine in the open border rising some 2 to 3 feet in height and as much across, very heavy rains and high winds disfigure its young stems, leaves, and beautiful blossoms very much at times; but well-grown plants with plenty of pot-room form very beautiful specimens for the conservatory or greenhouse, both for early and late spring months. (*John Gray*).—We only undertake to name four or five specimens at a time. 1. *Cassiopea hastata*; 2. *Alseodorus crispus*; 3. *Davallia nematodes* (?); 4. *Adiantum assimile*; 5. *Asplenium fontanum*; 6. *Pteris chinensis*; 7. *Gomphium regalis*. (*C. M. M.*).—*Oncoclea sensibilis*. Burlington says it is naturalised in one spot near Warrington. (*H. T.*).—1. *Tormentilla officinalis*, the common Tormentil; 2. *Cerastium vulgatum*, the common Mouse-ear Chickweed; 3. *Cardamine hirsuta*, the Hairy Bittercress.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

RELATIVE ENTRIES OF VARIOUS BREEDS AT POULTRY SHOWS.

IN reading the report of the late chicken Show at the Agricultural Hall at Islington, as given by a daily paper, I was struck by the remark that Dorkings were at the head, and that entries were far more numerous than that of any other class!

Taking, then, the catalogue of this Show as my text, I have made a few calculations which I have tabulated as follows:—

Breed.	Number of Exhibitors.	Number of Entries.	Amount offered in Prizes. £ s. d.	Amount obtained by Entries. £ s. d.
Spanish.....	17	39	18 0 0	7 10 0
Dorking.....	27	69	28 10 0	17 5 0
Cochin.....	25	42	21 0 0	10 10 0
Brahmas.....	11	25	10 0 0	6 5 0
Game.....	25	53	32 10 0	15 10 0
Hamburghs.....	28	35	30 0 0	8 15 0
Pollish.....	7	13	15 0 0	3 5 0
Malay.....	2	3	4 0 0	0 15 0
Other Breed.....	9	12	5 0 0	3 0 0
Bantams.....	30	54	21 0 0	8 2 0

Taking these figures we may notice that, albeit the Dorking may be the popular fowl, yet in number of exhibitors that breed is exceeded by Bantams and Hamburghs, Cochins and Game treading very closely on their heels, if, in speaking of poultry, it is allowed that they have any. Bantams,

it must be remembered, paid only 3s. entry; why, it is difficult to understand. This may not, perhaps, have influenced the entries very much, but I apprehend it does more than framers of regulations imagine.

In number of entries the Dorking is at the head very decidedly, giving by entry to the coffers of the Company £17 5s. out of the £23 10s. offered in prizes—about three-fourths in fact. But, what have we No. 2 as, in fact, the second best payer in proportion to prizes offered?—Listen ye compilers of the Bath and West of England schedules, and ye men of Worcester and the Eastern Counties—Why, Brahmas! True, they were never before so liberally invited; but, equally true, they responded liberally to the invitation, bringing back as their quota very nearly two-thirds of the prize money.

Some one says they were unusually numerous. I reply they were unusually treated; but it also remarks that they were unusually good. This, a glance at the prize list would not induce a non-visitor to believe. In the list of prizes and commendations there is only one new name to me, whilst there are many good names unnoticed. Possibly, it may be said of the classes generally, that the Judges were not lavish of commending—all the more honour where obtained. Cochins return exactly one-half, and Spanish somewhat over the half. Then the "abortions," with an attached adjective of the daily paper. The little Bantams came next. I could not but fancy the reporter considered they ought to be as large as the other breeds when he styled them as above. Then comes a terrible falling-off: Game did not bring back nearly half, and Hamburghs, Polands, and Malays bring the amount lower and lower. Still the former are invariably offered handsome prizes.

I have not noticed the Ducks. It strikes me that here the very liberal prize list of the Islington Show falls off. The prizes are very poor comparatively, and I think the Company would be the richer if they increased them, perhaps at the expense of some of the other breeds which do not muster as they ought. I say this although it affects breeds to which I am partial. This, however, appears plainly from the Islington Show, that the much-disputed breed, the Brahma, does not deserve in any Show professing to be good the "Any other variety" as its destination. They have fought their way up steadily but surely, and are daily better appreciated, and in many situations for general purposes are the most valuable fowl.—Y. B. A. Z.

SPARKENHOE FARMERS' CLUB POULTRY SHOW.

THIS popular Society has for many years past been gradually increasing in public favour, until at length there are very few local meetings that draw together so good an exhibition of poultry as this does: consequently the competition that invariably ensues always brings as goodly a muster of poultry amateurs as can be found even at shows of much higher pretensions. It is worthy of consideration that the really useful table poultry, of whatever description, have always been a great feature of the Sparkenhoe Meetings, and this year the same remark is equally deserved. To such a meeting, and with so liberal a prize list, of course to win at Sparkenhoe is invariably considered one of a poultry-breeder's most anxious desiderata.

We believe this is the only Society in the kingdom that offers the following premium—viz., for the best three pens of any variety or breed the property of one person, and to be entered solely and specially for this competition, one single restriction being that each pen is to contain a male and two females. This is the point beyond all others that elicits public attention—so much so, that the competition annually becomes stronger in this class, and the anxiety to know who may win the silver cup never flags. It is admittedly a matter of considerable difficulty to get three first-rate pens from any single yard; still, this year not less than eleven competitors entered for this premium.

The triumph was with the yard of Viscountess Holmesdale, and it was to such fowls an easy triumph. The Dorkings shown by this lady have thus been instrumental in securing a second silver cup in less than a fortnight for their fair owner, for at the London Islington Show last week they

took the cup for the best pen of fowls in that Show. At Sparkenhoe they again were successful. In the present instance they were shown with a really first-class pen of Black Spanish, and a remarkably good and well-exhibited pen of white Cochins of this present year. The winners of the second prize in this class are also well worthy of mention. The Black Game pen was especially good, and the Partridge-coloured Cochins were also first-rate; but the Spanish were far, very far, behind Lady Holmesdale's. Captain Buckley sent two capital hens, one of Grey, the other of White Dorking; but the Silver-pencilled Hamburg pen threw them out altogether. Mr. Everard, of Bardon Hill House, Leicester, showed two splendid lots, and both were highly commended. Mr. Warner's single entry was well entitled to the same position. Two really good pens and one faulty one pretty closely describe the particular entries of the remaining competitors.

In the general *Spanish* class were some good birds, and doubtless the prize chickens with care will greatly improve. Three hens were shown together in one pen, and, of course, were at once disqualified.

In the Grey *Dorkings*, Viscountess Holmesdale quite outdistanced all rivals. They were a grand pen, and one of the best pens shown this season. Mr. Everard's second-prize pen was also very good. There was scarcely any pen of White *Dorkings* so good as those that have been met with at previous meetings of this Society.

In *Cochins* (all colours competing), the entry was an indifferent one; in fact, the class as a whole was one of the most irregular in combs, &c., we have seen for some time past.

The *Game* class, White or Piles, except the winning pens, was a weak one; but the one for either Black Red or Brown Red *Game* fowls made ample amends. We regretted to see the Brown Red cockerel (second prize) so badly "dubbed," for in the hands of an expert cocker much more might be made of him.

The Golden-spangled *Hamburghs* were good, and a pen of Red Caps were shown among them. All the other varieties of *Hamburghs* were also superior, but the Silver-pencilled first-prize was one of the gems of the whole Show.

The *Andalusians* and the *Silkie*s were capital in the Variety class.

A pen of *Malays* that were here badly exhibited would be hard to beat anywhere, if well shown.

The Chinese Golden and Silver *Pheasant* classes brought but two entries, one of either breed. They were, however, quite a credit to Mr. Lennard, who exhibited them.

In *Aylesbury Ducks* yellow bills were no unfrequent drawback. It is always a fatal objection. The Rouen Ducks and the Buenos Ayrean were, however, better than we usually find them.

Of the whole classes both of *Geese* and *Turkeys* we cannot possibly speak too highly. The "poult" were by far the best we have seen this year, and some of the goslings were not less praiseworthy, but we must direct the attention of exhibitors that only one gander is admissible in each pen.

In *Guinea Fowls* a second prize was withheld; the rule being for pairs of birds in this class, not three, disqualification was inevitable. The *Bantams* were not of high character.

The show of *Pigeons* and *Rabbits* was excellent and caused great attraction. Although the weather throughout the whole night previous to the public admission was fearfully wet, about 8 o'clock A.M. the sun broke brightly, a fine day ensued, and the company was a large one, the whole Show going off right merrily.

Silver Cup, Viscountess Holmesdale, Linton Park, Staplehurst, Kent (Grey Dorking, White Cochins, Black Spanish). Second, H. Yardley, Market Hall, Birmingham (Black Spanish, Partridge, Cochins-China, Black Game). Highly Commended, W. T. Everard, Bardon Hill House, Leicester (Duckwing Game, White Dorkings, Brown Red Game, Grey Dorkings, Aylesbury Ducks, Black-breasted Red Game); H. Warner, The Elms, Loughborough (Black-breasted Red Game, Grey Dorkings). Commended, J. Bott, Sheepy, Atherstone (All three pens Brown Red Game).

SPANISH.—First, E. Morley, Sapote, Hinckley. Second, W. T. Everard, Bardon Hill House, Leicester. Highly Commended, H. Yardley, Market Hall, Birmingham.

DORKING (Coloured).—First, Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Second, W. T. Everard, Bardon Hill House, Leicester. Highly Commended, A. Guy, Eaton, Grantham; H. Warner, The Elms, Loughborough. Commended, W. Trussell, Moira, Ashby-de-la-Zouch; Mrs. P. Wolferstan, Statfold Hall, Tamworth; W. T. Everard.

DORKING (White).—First, Mrs. Wolferstan, Statfold Hall, Tamworth. Second, W. T. Everard, Bardon Hill House, Leicester.

COCHIN-CHINA.—First, Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Second, H. E. Emberlin, Humblestone, Leicester.

GAME (White, Piles, and light colours).—First, C. B. Lowe. Second, W. T. Everard, Bardon Hill House, Leicester.

GAME (Red, and other dark colours).—First, G. Bott, Sheepy, Atherstone. Second, C. Lea, Rowden, Hinckley. Highly Commended, J. M. Baker, Hall End, Tamworth; Mrs. Millhouse; T. Horley, Jun., The Fosse, Leamington; C. B. Lowe, Sheepy Hall, Atherstone; H. Warner, The Elms, Loughborough; Dr. Hitchman, Mickleover, Derby. Commended, W. Bancroft, Clifton; G. Bott.

HAMBURGH (Gold-spangled).—First and Second, H. E. Emberlin, Humblestone, Leicester. Highly Commended, Captain Buckley, Desford.

HAMBURGH (Gold-pencilled).—First, Captain Buckley, Desford. Second, J. Holt, Nuneaton. Highly Commended, G. Jones, Birmingham. Commended, J. Choyce, Harris Bridge, Atherstone.

HAMBURGH (Silver-spangled).—First and Second, J. Holt, Nuneaton. Highly Commended, Mrs. Wolferstan, Statfold Hall, Tamworth; Captain Buckley, Desford.

HAMBURGH (Silver-pencilled).—First, Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Second, J. Holt, Nuneaton. Commended, T. Charlesworth, Leicester.

ANY OTHER DISTINCT BREED.—First, C. B. Lowe, Sheepy Hall. Second, J. Meredith, Merevale, Atherstone. Highly Commended, J. Meredith; J. Choyce, Harris Bridge, Atherstone.

PREASANTS (Golden).—Prize, S. Lennard, Leicester.

PREASANTS (Silver).—Prize, S. Lennard, Leicester.

DUCKS (White Aylesbury).—First and Second, H. E. Emberlin, Humblestone, Leicester.

DUCKS (Any other variety).—First, C. B. Lowe, Sheepy Hall, Atherstone. Second, J. Choyce, Harris Bridge, Atherstone. Highly Commended, A. Smith, Baxterly Hall, Atherstone; J. Choyce. Commended, W. Trussell, Moira, Ashby-de-la-Zouch; Captain Buckley, Desford; J. Choyce.

GESE.—First, G. Cowper, Seagrave, Loughborough. Second, Baroness de Clifford, Kirby Mallory, Hinckley. Highly Commended, S. H. Truelove, Hoppesford, Coventry; Baroness de Clifford. Commended, J. M. Grundy, Drayton, Nuneaton.

TURKEYS.—First, J. Coxon, Freeford, Lichfield. Second, S. H. Truelove, Hoppesford, Coventry. Highly Commended, W. Winterton, Hinckley; Mrs. A. Guy, Eaton, Grantham; J. Taylor, Weddington, Nuneaton.

GUINEA FOWLS.—Prize, J. Johnson, Braunstone, Leicester.

BANTAMS.—First, W. T. Everard, Bardon Hill House, Leicester. Second, H. Warner, The Elms, Loughborough.

PIGEONS. —Pouters or Croppers.—First, Rev. R. W. Fisher, Alton, Cheshire. Second, J. Langham, Belgrave, Leicester. Highly Commended, H. E. Emberlin, Humblestone, Leicester; Rev. R. W. Fisher. Commended, J. Langham.

CARRIERS.—First, Rev. R. W. Fisher. Second, H. Yardley, Market Hall, Birmingham. Highly Commended, H. E. Emberlin, Humblestone, Leicester. First, W. Choyce, Sibson, Atherstone. Second, H. Yardley. Commended, J. Langham.

FRUITFUL.—First, W. Choyce. Second, H. E. Emberlin. Highly Commended, W. Choyce; H. Yardley. Commended, H. Yardley; J. Langham; R. Nason. Any other distinct variety.

First, W. Choyce. Second, H. Yardley. Highly Commended, J. Smith (Jacobins). Commended, W. Choyce (Nuns); J. Smith, Walsall (Arch-angels); H. Yardley.

RABBITS. —For Weight.—Prize, G. Jones, Birmingham. **For Length of Ear**.—First, G. Jones. Second, W. Chamberlain, Desford, Leicester. Any other kind. First, W. Chamberlain. Second, Master J. A. Geary, Dadlington. Highly Commended, G. Jones. Commended, W. Choyce.

Mr. Edward Hewitt, of Sparkbrook, near Birmingham, officiated as the arbitrator of the poultry, Pigeon, and Rabbit department.

DEWSBURY POULTRY SHOW.

THE field in which the annual Show was held on Wednesday, August 26th, is situated in Savill Town, in Thornhill, and about 250 yards as the crow flies from Savill Bridge. It was admirably suited for the purpose for which it was used, and being well drained the herbage was quite dry, despite the rain of the day before.

In *Cochins* some fine birds were shown, the first prize in the adult class and both the chicken prizes being won by white birds. In *Spanish* there was close competition. The chicken prizes were easily won by local exhibitors, and we think these would be more successful in the adult class were they not so easily tempted to part with their best birds to other exhibitors. The *Hamburghs* as usual were good, as were the *Polands*, the prizes with few exceptions going to Miss Beldon and Mr. Dixon. In *Game* fowls there were good birds shown; the prize birds with few exceptions would have been successful at the principal shows. *Bantams* were not so numerous as formerly. We missed some of our old exhibitors in these classes.

In the classes for *Ducks* there was but one pen of *Aylesbury*. The Rouen were first-rate. There were about sixty pens of *Pigeons*, most of which were good birds and formed a very attractive feature of the Show. At one time it was next to impossible to obtain even a cursory view of some of the pens. The *Rabbits* were good and much admired.

COCHIN-CHINA.—First, W. Dawson, Hopton, Milsfield. Second, J. Dixon, Bradford. *Chickens*.—First and Second, W. Dawson.

SPANISH.—First, Miss E. Beldon, Gilestead, Bingley. Second, J. Dixon. *Chickens*.—First, T. Greenwood, Eastfield House. Second, J. S. Senior, Baiter Carr.

Downing.—First, Miss E. Beldon. Second, J. Dixon. *Chickens.*—Prize, E. Leech, Greave House, Rochdale.
Hambrook (Golden-spangled).—First, J. Dixon. Second, Miss E. Beldon. *Chickens.*—First, J. Dixon. Second, H. Himsforth, Lupsett.
Hambrook (Silver-spangled).—First, J. Dixon. Second, Miss E. Beldon. *Chickens.*—First, Miss E. Beldon. Second, J. Dixon.
Hambrook (Golden-pencilled).—First, J. Dixon. Second, Miss E. Beldon. *Chickens.*—Prize, J. Dixon.
Hambrook (Silver-pencilled).—First, J. Dixon. Second, Miss E. Beldon. *Chickens.*—First, Miss E. Beldon. Second, J. Dixon.
Polands (Golden or Silver-spangled).—First, Miss E. Beldon (Silver). Second, J. Dixon (Golden). *Chickens.*—First, J. Dixon (Golden). Second, W. Newcome, Bingley (Silver).
Polands (Any other variety).—First, Miss E. Beldon. Second, J. Dixon. *Chickens.*—First, J. Dixon. Second, W. Newcome.
Game (Black-breasted and other Reds).—First, H. & C. Mason, Drighlington. Second, Miss E. Beldon. *Chickens.*—First, H. & C. Mason, Second, B. Naylor, Heckmondwike. Highly Commended, J. Brook, General.
Game (Duckwings).—First, J. Riley, Chickenley. Second, J. H. Mason, Heckmondwike. *Chickens.*—First, T. Vickerman, Chickenley. Second, S. Schofield.
Game (White and Piles).—First and Second, H. & C. Mason. *Chickens.*—First and Second, H. & C. Mason.
Game (Black and Brassy-winged, except Greys).—First, G. Noble, Staincliffe. Second, J. Brook. *Chickens.*—First, J. Brook. Second, G. Noble.
Game Cock.—First, J. Hill & Sons, Drighlington. Second, Miss E. Beldon.
Bantams (Black).—First, J. Dixon. Second, S. Schofield, Heckmondwike.
Bantams (White).—First, J. Dixon. Second, S. Schofield.
Bantams (Gold and Silver-laced).—First, J. Dixon. Second, E. Beldon.
Bantams (Game).—First, G. Noble. Second, T. Vickerman.
Best Cock and two Hens not mentioned in the above classes.—*Black Hambrook.*—First, J. Dixon. Second, Miss E. Beldon. *Chickens.*—First, E. Leech, Greave House, Rochdale. Second, S. Schofield.
Sweepstakes.—*Game.*—First, H. & C. Mason. Second, T. Vickerman.
Bantam.—First, T. Vickerman. Second, Wallace & Oldroyd, Dewsbury.
Ducks (Aylesbury).—Prize, E. Leech. *Rouen.*—First, J. Dixon. Second, E. Leech.
Pigeons.—*Pouters.*—Prize, Miss E. Beldon. *Carriers.*—First, J. Firth, Dewsbury. Second, — Hughes, Leeds. *Tumblers* (Almond).—First, Miss E. Beldon. Second, — Hughes. *Tumblers* (Any other variety).—First, Miss E. Beldon. Second, — Hughes. *Turbits.*—First, Miss E. Beldon. Second, — Hughes. *Jacobins.*—First, — Hughes. Second, G. J. Breary; M. Spedding. *Trumpeters.*—First, Miss E. Beldon. Second, E. Robson, Brotherton. *Owls.*—First, Miss E. Beldon. Second, J. Firth. Highly Commended, — Hughes. *Barbs.*—Prize, Miss E. Beldon. *Fantais.*—First, Miss E. Beldon. Second, J. Firth. *Nuns.*—First, Miss E. Beldon. Second, — Hughes. *Common Pigeons.*—First, G. J. Breary, M. Spedding. Second, J. Knowles, Dewsbury. *Any other variety.*—First, Miss E. Beldon. Second, J. Wade.
Rabbits.—*Lop-Eared.*—First, C. A. Ridgeway, Dewsbury. Second, G. Haggard, Dewsbury. *For Colour.*—First and Second, L. Brook, Gomersal. *For Weight.*—Prize, C. A. Ridgeway.

PRESENT VALUE OF COCHIN FOWLS.

If anything were wanting in proof that good Cochin fowls are still very highly valued by poultry-breeders, and, if carefully bred, are a most productive source of profit, the following list of the sum produced already in this single season, from one gentleman's stud, would give conclusive evidence that the so-called "Cochin mania" is not to be altogether considered as a bygone, nor to be regarded as an unproductive folly. The facts, as handed to us by the owner himself, he has verified by the offer of reference to the purchasers of each lot if required. In short, he solicits investigation:—

LIST.

"BUFFS."			"PARTRIDGE-COLOURED."		
	£	s. d.		£	s. d.
1 cock	21	0 0	1 cock and 2 hens	13	13 0
1 cock and 2 hens	21	0 0	1 ditto	12	12 0
1 cock and 3 hens	20	0 0	1 cock	6	6 0
1 cock and 2 hens	10	10 0	1 hen	5	5 0
21 chickens (three months, 1863)	11	11 0	Partridge chickens (1863)	12	12 0
4 pullets (Birmingham Show, 1862)	10	10 0	Total	50	8 0
3 pullets, 1st Birmingham, claimed at	4	4 0	"WHITE."		
Total	98	15 0	1 pen, cock and 2 hens	8	8 0
			1 ditto	5	5 0
			1 ditto	4	4 0
			2 hens	4	0 0
			Total	21	17 0

"The above birds have been sold for the *bona fide* prices quoted, besides upwards of £40 worth at lower prices, from my own yards alone at and since the Birmingham Show, 1862.—CHAS. FELTON, Erdington."

CHILLED EGGS.

I must apologise for again troubling you; but as some of your readers may still doubt my statements about eggs hatching after being cold, I have another example to offer. On the 27th July, 1863, nine Cochin-China eggs were put

under a hen, which my man placed in a secure spot to sit, although not exactly suited to my views, but I let him have his way. However, the hen after a few days objected to sit by compulsion, and he came with a long face to inform me on the 6th of August, that she would not sit, and the eggs were cold. I found them quite cold and very dirty, having been trampled on. I took them and washed them, and put them under a Cochin hen. Some of the eggs (three), being added, I threw them away, and to-day three chickens were hatched from the other eggs; one chicken in another evidently dead a long time, and the other eggs clear. I had no hopes of hatching any, and had it not been for the experiment would have thrown them away. They must have been cold twenty-four hours, and they hatched one day late only. They were wetted by myself several times and hatched strong chickens; the weather being about the same as an English summer, and the hen sitting in a barrel on its side with the end open. I think this proves, as I have done before, that it is worth while to continue sitting eggs that have been chilled even when cold.—F. C. HASSARD.

HALIFAX AND CALDER VALE AGRICULTURAL SHOW.

THE twenty-fifth annual Exhibition of the Halifax and Calder Vale Agricultural Association took place on Saturday the 29th ultimo (by the kind permission of Joshua Appleyard, Esq.), in Clare Hall Park, Halifax. The reputation that this annual gathering has had of being one of the most attractive in the north of England, was fully borne out this year by the character of the Show. The weather being most propitious, no less than 12,000 visitors, who paid £310 for admission, were present. The Show comprised Cattle, Horses, Dogs, Pigs, Poultry, Pigeons, Crops, Butter, Eggs, and Implements, each department having its admirers. The arrangements of Mr. Irvine, the Secretary, were most complete, and admirably carried out. Poultry numbered 370 pens, and Pigeons 125.

Spanish headed the list, and were more numerous than usual in this neighbourhood. In adults the competition was not so close as in chickens. We were, however, completely at a loss to discover the superiority of the first over the second-prize pen. Some promising chickens were shown, but several of them were much trimmed.

Dorkings were well represented. In chickens, the Rev. J. F. Newton was first and second with good pens.

Cochins were numerous. In adults, Mr. Stretch and Mr. Dixon obtained first and second positions with Buffs, while Captain Heaton's Partridge were third; and although not in good condition, we thought the latter should have taken one step higher. In the chicken class Captain Heaton was first with a nice pen of Buffs, the cockerel rather leggy. The second prize was awarded to the same colour. Whites were third.

Brahmas were shown rather strongly, and contained many good specimens.

For *Single Game Cocks* there was an entry of eighteen, and, as might have been expected at this season, scarcely a bird in feather. The silver cup was awarded to Mr. Boyes, of Beverley, for a Black Red of superior quality, though rather faulty in head. Mr. Firth took second and third with a Brown Red and Black Red respectively, the latter appearing most unhappy at the close proximity of his neighbours. Three pens received high commendations, to which they were unquestionably entitled. A well-known successful exhibitor was represented by a single specimen, which, however, was unnoticed, except by inquirers who were at a loss to make out what colour the bird was intended to be. In single cockerels especial remark is unnecessary.

In the class for adult *Game*, good Black Reds were first and second, and Brown Reds third. Chickens were numerous, and of average quality. The prize adult Duckwings were good, and not equalled by the chickens. In "Any other Game," Mr. Adams's capital pen of Piles had to give place to indifferent Blacks; and in chickens splendid Piles belonging to the same exhibitor well deserved their first honours.

In *Polands* most of the best birds were completely out of feather. Silvers took first in both adults and chickens, and White-crested Blacks second.

Gold-pencilled *Hamburgs* formed fair classes, including some promising chickens. In Silver-pencilled *Hamburgs* some of the exhibitors were rather perplexed to find the first prize awarded to a pen without any pretension to "get up," with respect to colour and white ear-lobe, more particularly in the cock. In chickens, Mr. Dixon exhibited the best cockerel we have seen this year. Golden-spangled *Hamburgs* were much out of feather, and we fancied the prizes might have been reversed without being much from the mark. The chickens were good. In adult Silver-spangled *Hamburgs* Miss Beldon stood aloof of all competition. The chickens were a fair lot. Black *Hamburgs* formed nice classes.

In "Any other distinct breed" in adults, Mr. Dawson once more put in an appearance with his wonderful *Sultans*, taking first; *Malays* obtaining the other prizes. In chickens, Chinese *Silks* were first, and *Crève Coeurs* second.

Game *Bantams* were exhibited in greater numbers than quality. A smart pen of white-legged Black Reds were first; Brown Reds second. Sebrights were an average class; Silver-laced first and second; and Gold-laced third. "Any other variety" *Bantams* were a poor lot. Whites first; Blacks second; and a combination of both colours third.

Aylesbury Ducks were capital, Mr. Fowler only receiving second and third awards. In *Rouens*, Mr. S. Shaw's yard maintained its superiority in a very good class; and in "Any other variety" of *Ducks*, the first and third prizes were taken by the same exhibitor for splendid *Carolinans* and *Pintails*; *Mandarins* being second.

Geese and *Turkeys* were well represented.

The show of *Pigeons* formed not the least attractive feature of the Exhibition, which can be easily understood when the names of Messrs. Eden, Shaw, and Beldon, a host in themselves, were included in the list of exhibitors. The *Powder* classes were well filled. In that for single cocks, Mr. Eden was first with a splendid White; and Mr. Smith second, with a very superior Blue. For hens, Mr. Eden carried off both prizes with Whites of great length and admirable shape. In *Carriers*, Mr. Eden obtained three out of the four prizes; Miss Beldon taking first with her well-known Dun hen. The same exhibitors maintained their respective positions in *Almonds*. The Mottled *Tumblers* were excellent, more especially the first-prize pen; while in *Balds* or *Beards*, Mr. Shaw was first and second with Blue *Beards* and Silver *Balds*. The Owl prizes were awarded to fair Whites well shown. In *Turbits*, the first prize fell to Blues in good condition, rather coarse and uneven in crest; capital Reds taking second. Mr. Shaw had it all his own way in *Jacobins* with his famed Reds. *Fantails* were good, the prize birds being in excellent condition. The *Barbs* were unusually meritorious. Mr. Eden's magnificent *Yellows* were first; while his Blacks received high commendations. Mr. Shaw was second with the latter colour. *Dragons* were an excellent class: very fine Blues won, and changed ownership at the price of three guineas. The *Trumpeter* class was scarcely so good as might have been expected, Mr. Shaw's wonderful *Mottles* not having been sent. Miss Beldon was first with good *Mottles*; Blacks being second. In "Any other breed," Black Spots were first and excellent; Black-head Nuns second.

The Society's silver cup for the largest number of *Pigeon* prizes, or rather points, a first prize counting two, and a second one point, fell to the lot of Mr. Eden.

SPANISH.—First, J. Siddall, Halifax. Second, Miss E. Beldon, Gilstead. Bingley. Third, R. M. Stark, Hull. Commended, J. Dixon, Bradford; T. Greenwood, Eastfield House, Denbury. *Chickens*.—First, T. Greenwood. Second, J. Siddall. Third, Miss E. Beldon.

DORINGS.—First, E. Smith, Middleton. Second, Miss E. Beldon, Bingley. Third, R. M. Stark, Hull. Commended, Rev. J. F. Newton, Kirby-in-Cleveland. *Chickens*.—First and Second, Rev. J. F. Newton. Third, H. Crossley, Broomfield. Commended, S. Pickard, Wakefield; J. Hargreaves, Skipton.

COCHIN-CHINA.—First, T. Stretch, Ormskirk (Buff). Second, J. Dixon, Bradford (Buff). Third, Capt. Heaton, Manchester (Partridge). Commended, J. Firth, Halifax. *Chickens*.—First, Capt. Heaton, Manchester (Buff). Second, W. Dawson, Mirfield (Buff). Third, M. Mahoney, Bingley (White). Commended, Capt. Heaton.

BRAMA POOTRA.—First and Third, H. Lacy, Hebden Bridge. Second, P. Fares, Chertsey. *Chickens*.—First, S. W. Tinker, Huddersfield. Second, Lister, Mirfield. Third, H. Lacy. Highly Commended, S. W. Tinker. *Game.*—Cock (Any age or colour).—Cup, W. Boyes, Beverley (Black Red). Second and Third, J. Firth, Ellens Grove (Brown and Black Red). Highly Commended, H. Snowden, Great Horton; H. Adams, Beverley; B. Dyer, Madely. *Cockerel*.—First, J. Firth (Black Red). Second, J. Firth, Madely. Third, H. Snowden, Great Horton. (Duck

wing). Highly Commended, I. Wright, Ovenden. Commended, W. Bentley, Cleckheaton.

GAME (Black-breasted and other Red).—First, R. Adams, Beverley. Second, Miss E. Beldon, Bingley. Third, H. C. Mason, Leeds. Highly Commended, H. Crossley, Broomfield. Commended, J. Firth, Ellens Grove. *Chickens*.—First, I. Wright, Ovenden (Black Red). Second, J. Riley, Dewsbury. Third, J. Hodgson, Bradford. Highly Commended, J. Firth; R. Hemlingway, Shelf; A. Hodgson, Ilkworth. Commended, J. Spencer, Howarth.

GAME (Duckwing, Grey, and Blue).—First, H. Adams, Beverley. Second, Miss E. Beldon, Bingley. Third, H. Snowden, Great Horton. *Chickens*.—First, T. Dyson, Halifax. Second and Third, J. Firth, Ellens Grove.

GAME (Any other variety).—First, T. Hartley, Leeds (Black). Second and Third, H. Adams, Beverley (Piles). Highly Commended, H. C. Mason, Leeds. *Chickens*.—First, H. Adams, Beverley (Pile). Second, J. Hanson, Shelf (Pile). Third, G. Noble, Batley (Black). Highly Commended, W. Sutcliffe, Mytholmroyd.

POLANDS.—First and Third, J. Dixon, Bradford (Golden and Silver). Second, J. Smith, Keighley (Black). Highly Commended, Miss E. Beldon, Bingley (Silver). *Chickens*.—First, W. Newsome, Bingley (Silver). Second, J. Smith (Black). Third, J. Dixon (Black). Highly Commended, J. Dixon.

HAMBURGUS (Golden-pencilled).—First, S. Smith, Northwram. Second, A. M. Higgin, Burnley. Third, Mrs. M. Hemingway, Shelf. Highly Commended, Miss E. Beldon, Bingley. *Chickens*.—First and Third, S. Briggs, Holywell Green. Second, J. Firth, Halifax. Highly Commended, S. Smith.

HAMBURGUS (Silver-pencilled).—First, S. Briggs, Holywell Green. Second, Miss E. Beldon, Bingley. Third, S. Fielding, Middleton. Highly Commended, J. Dixon, Bradford. *Chickens*.—First, J. Dixon. Second, Miss E. Beldon. Third, S. Fielding. Highly Commended, K. Gill, Bingley.

HAMBURGUS (Golden-spangled).—First, J. Newton, Silsden. Second, Miss E. Beldon, Bingley. Third, N. Marlor, Manchester. Highly Commended, J. Ellis, Leeds. *Chickens*.—First, N. Marlor. Second, J. Ellis. Third, J. Dixon, Bradford. Highly Commended, Miss E. Beldon.

HAMBURGUS (Silver-spangled).—First and Second, Miss E. Beldon, Bingley. Third, J. Dixon, Bradford. Highly Commended, F. W. Earle, Prescott; A. Newton, Silsden. *Chickens*.—First, Mrs. H. Sharp, Bradford. Second, S. Briggs, Holywell Green. Third, W. Sagar, Shipley.

HAMBURGUS (Black, White, or any other variety).—First, H. Adams, Beverley. Second, R. H. Nicholas, Newport, Monmouthshire. Third, S. Briggs, Holywell Green. *Chickens*.—First and Second, J. Dixon, Bradford. Third, J. Spencer, Howarth. Highly Commended, S. Briggs. Commended, S. Briggs.

ANY OTHER DISTINCT BREED (except Bantams).—First, W. Dawson, Mirfield (Sultans). Second, Miss E. Beldon, Bingley (Malay). Third, J. Dixon, Bradford (Malay). *Chickens*.—First, G. H. Greenwood, Lower Saltonstall (Sultan). Second, W. Dawson, Mirfield (Crève Coeurs). Third, Rev. W. Story, Davenry (Antwerp).

BANTAMS (Game).—First, Mrs. Noble, Staincliffe, Botley (Black Red). Second, I. Thornton, Heckmondwike. Third, E. Brown, Sheffield.

BANTAMS (Sebright, Gold or Silver-laced).—First, Miss E. Beldon, Bingley (Silver). Second, W. H. Rawson, jun., Mill House (Silver). Third, J. Dixon, Bradford (Gold).

BANTAMS (Any other variety).—First, S. Schofield, Heckmondwike (White). Second, J. Gerner, Bradford (Black). Third, C. Walker, Halifax.

DUCKS (Aylesbury).—First, E. Leech, Rochdale. Second and Third, J. K. Fowler, Aylesbury. Highly Commended, T. E. Kell, Wetherby. Commended, R. M. Stark, Hull.

DUCKS (Rouen).—First, S. Briggs, Holywell Green. Second and Third, J. Dixon, Bradford. Highly Commended, S. Pickard, Wakefield.

DUCKS (Any other variety).—First and Third, S. Briggs, Holywell Green (Carolina and Pintail). Second, J. Dixon, Bradford (Mandarins). Highly Commended, F. W. Earle, Prescott (Black East-Indian). Commended, J. E. Jessop, Hull (Black East-Indian); J. Dixon (Grey Call).

GESE.—First, J. Dixon, Bradford (Toulouse). Second, W. Sugden, Brighouse (Emden). Third, H. Edwards, M.P., Pye Nest (Chinese).

TURKEYS.—First and Second, J. Dixon, Bradford (American). Third, E. C. C. Walker, Crow Nest. Commended, J. E. Norris, Brearley Hall.

EXTRA STOCK.—Highly Commended, H. Edwards, M.P., Pye Nest (Black Swans); W. Irvine, Ovenden (Buff Cochins-China pullets).

PROCKS.—*Powders* or *Croppers*.—First, P. Eden, Salford (White). Second, W. Smith, Beech Hill (Blue). Highly Commended, P. Eden; W. Smith. Commended, W. Smith. *Hens*.—First and Second, P. Eden, Salford (White). Commended, Miss E. Beldon, Bingley; E. Brown, St. Philip's Road, Sheffield. *Carriers*.—First and Second, P. Eden, Salford (Dun). Commended, Miss E. Beldon, Bingley; C. J. Samuels, Manchester.

Hens.—First, Miss E. Beldon, Bingley (Dun). Second, P. Eden, Salford (Black). Commended, P. Eden, Salford; J. Firth, Dewsbury. *Almond Tumblers*.—First, P. Eden. Second, Miss E. Beldon. Commended, P. Eden.

Mottled Tumblers.—First, P. Eden. Second, S. Shaw, Stainland. *Balds* or *Beards*.—First and Second, S. Shaw, Stainland (Blue Beards and Silver Beards). *Owls*.—First, Miss E. Beldon (White). Second, H. Yardley, Birmingham (White). Commended, J. Firth, Dewsbury. *Turbits*.—First, H. Yardley (Blue). Second, S. Shaw (Red). Commended, S. Shaw.

Jacobins.—First and Second, S. Shaw (Red). *Fantails*.—First, T. C. Taylor, Middlesborough. Second, Miss E. Beldon. *Barbs*.—First, P. Eden (Yellow). Second, S. Shaw (Black). Highly Commended, P. Eden. Commended, S. Shaw. *Dragons*.—First, Miss E. Beldon (Blue). Second, J. Nelson, Ovenden. Highly Commended, A. Whitaker, Ovenden. *Trumpeters*.—First, Miss E. Beldon (Black Mottled). Second, S. Shaw (Black). *Maggies*.—First, J. Wade, Leeds (Yellow). Second, S. Shaw (Black). *Any other breed*.—First, S. Shaw (Black Spot). Second, Miss E. Beldon (Nuns). Highly Commended, S. Shaw.

JUDGES.—*Poultry*.—Mr. Baxter, Elslack, Skipton; Mr. J. H. Smith, Skelton Grange, York; and Mr. P. Eden, Manchester. *Pigeons*.—Mr. Harrison Weir, London; and Mr. Thompson, Southwram.

WHITWORTH AND ROCHDALE AGRICULTURAL SOCIETY.—At the ninth annual meeting and exhibition of this Association held on the 19th ult., Mr. John Wrigley, reed-maker, exhibited two glass bee-hives, which

afforded an excellent opportunity to the observer of witnessing the operations of the busy occupants inside, their attention to the queen, and the movements of that royal personage while she deposited her eggs, with a full insight into the domestic life of these little insects, whose industry is only equalled by the ingenuity displayed in the internal construction of their honey-laden home.—(*Rochdale Observer*.)

WAKEFIELD POULTRY SHOW.

THE second annual Exhibition of the Wakefield Poultry Society took place at Wakefield on Wednesday last, the 2nd inst. The number of poultry was not large, but many excellent birds were shown.

Game were divided into classes of adults and chickens respectively, for Black-breasted and other Reds and Duckwings; while a class was allotted for Game and other variety of any age. In old Birds good Black Reds won. In *Duckwings* the first-prize pen would have appeared to more advantage had the legs of the birds matched in colour. Blacks secured the remaining prizes. The chickens were, as a lot, inferior to the old birds. *Spanish* were good; Miss Beldon, however, having an easy victory in adults. In adult *Cochins* Buffs were first and Whites second. In chickens Partridge took first position and Buffs second. *Dorkings* formed a nice lot; some of the prize birds were of great excellence. *Hamburghs* were good. Miss Beldon and Mr. Dixon carried off most of the prizes. The first-prize pen of Silver-pencilled chickens contained a splendid pair of pullets. *Polands* were good: White-Crested Blacks first. In *any other Breed* Mr. Dawson's Sultans won in adults; and in chickens Black *Hamburghs* obtained first prize. *Bantams* were of average merit. Mr. Harrison exhibited fine Whites rather deficient in feather. The silver medal for the best pen of Bantams was awarded to Black Red Game in the same condition. Some well-known capital Blacks, though entered, were absent. Silver-laced were fairly represented.

The show of *Pigeons* was excellent; chiefly, however, noticeable for the reversal of many of the Halifax decisions of the previous week, and for the introduction of a new feature in the exhibition of Barbs. In this class the first prize was awarded to a pen of Blacks with the wattle round the eye of the most exquisite magenta. A visitor, more curious than we imagine would have been agreeable to their owner—a chemist, we believe—instanter succeeded in removing the whole of this beautiful colour from an eye of one bird, contrasting the eye in its natural state with the supposed improvement. In *Fantails* crested birds took first, while in *Turbits* an indifferent pair of plain-headed Yellows gained that honour.

The following is the list of prizes:—

GAME (Black-breasted and other Reds).—First, F. Sales, Crowle, Lincolnshire. Second, Miss E. Beldon, Bradford. *CHICKENS*.—First, T. Vickerman. Second, J. Hodgson, Bradford. Highly Commended, Miss E. Beldon. *GAME* (Duckwing and other Greys and Blues).—First, J. Fell, Drighlington. Second, T. Vickerman. *CHICKENS*.—First, T. Vickerman. Second, J. Fell. Highly Commended, J. Hodgson.

ANY OTHER VARIETY.—First, G. Hartley, Gomersal. Second, G. Noble, Heckmondwike.

SPANISH.—First, Miss E. Beldon. Second, T. Burch, Sheffield. Highly Commended, J. Dixon, Bradford. *CHICKENS*.—First, S. Robson. Second, T. Greenwood. Highly Commended, J. Siddal, Halifax; S. Senior, Dewsbury; W. Newsome, Bingley.

COCHIN-CHINA.—First, H. & G. Newton, Garforth, Leeds. Second, W. Dawson, Hopton, Mirfield. Highly Commended, E. Smith, Manchester; R. White, Sheffield. *CHICKENS*.—First, E. Smith. Second, W. Dawson. Highly Commended, R. White.

DORKING.—First, — Himsforth, Wakefield. Second, J. Dixon, Bradford. Highly Commended, Miss E. Beldon. *CHICKENS*.—First, T. E. Kell, Wetherby. Second, Rev. J. F. Newton, Kirby-in-Cleveland. Highly Commended, J. Hirst, Wakefield; W. Newsome.

HAMBURGH (Golden-spangled).—First, Miss E. Beldon. Second, C. W. Brierley, Rochdale. Highly Commended, J. Dixon, Bradford; T. Burch. *CHICKENS*.—First, Miss E. Beldon. Second, T. Burch. Highly Commended, J. Dixon.

HAMBURGH (Silver-spangled).—First, Miss E. Beldon. Second, J. Dixon. Highly Commended, H. Carter. *CHICKENS*.—First, J. Dixon. Second, N. Nicholas, Manchester. Highly Commended, Miss E. Beldon.

HAMBURGH (Golden-pencilled).—First, S. Smith, Northowram. Second, Miss E. Beldon. Highly Commended, J. Dixon. *CHICKENS*.—First, J. Dixon. Second, Miss E. Beldon. Highly Commended, S. Smith.

HAMBURGH (Silver-pencilled).—First, Miss E. Beldon. Second, J. Dixon. Highly Commended, T. Vickerman. *CHICKENS*.—First, D. Illingworth. Second, H. Pickles, Jun. Highly Commended, J. Dixon.

POLANDS (Any variety).—First, Miss E. Beldon, White-crested Black. Second, J. Dixon, Silver. Highly Commended, H. Carter; W. Newsome. *CHICKENS*.—First and Second, J. Dixon.

ANY BREED NOT BEFORE NAMED.—First, W. Dawson. Second, J. Dixon. Highly Commended, H. & G. Newton. *CHICKENS*.—First, Miss E. Beldon. Second, R. Thompson, Kendal.

BANTAMS, Black-breasted and other Reds.—Silver Medal and First, T. Vickerman. Second, G. Noble. Highly Commended, J. G. Pearson, Whitchurch, Salop; — Harrison, Wakefield.

BANTAMS, Duckwing.—First, W. Lawrenson, Allestree, Derby. Second, Master C. Croland.

BANTAMS, White.—First, — Harrison, Wakefield. Second, J. Dixon. Highly Commended, T. Vickerman.

BANTAMS, Black.—First, J. Dixon. Second, S. Schofield.

BANTAMS, Golden or Silver-Laced.—First, J. Dixon. Second, Miss E. Beldon. Highly Commended, G. Malpas, Jun., Wavertree, Liverpool; E. Yeardley.

BANTAM COCKS, Game.—First and Second, Master C. Croland.

DUCKS.—Prize, J. Hirst.

PIGEONS.—*Carriers*.—First, H. Yardley. Second, J. Firth, Webster Hill, Halifax.

Powders.—First, S. Robson. Second, H. Yardley, Birmingham.

Highly Commended, Miss E. Beldon. *Tumblers*, Almond.—First, H. Yardley. Second, Miss E. Beldon. *Tumblers*, Any other variety.—First, W. Carlton. Second, Miss E. Beldon. *Barbs*.—First, T. D. Walker, Magenta eye. Second, H. Yardley. *Jacobins*.—Prize, F. Key, Beverley.

Trumpeters.—First, S. Robson. Second, Miss E. Beldon. Highly Commended, K. Key. *Owls*.—First, H. Yardley. Second, Miss E. Beldon.

Turbits.—First, M. E. Jobling, Plain-headed. Second, Miss E. Beldon.

Fantails.—First, H. Yardley. Second, J. W. Edge, Crested. *Nuns*.—First, Miss E. Beldon. Second, J. W. Edge. Any variety not mentioned.

—First, H. Yardley. Second, J. W. Edge. Highly Commended, T. D. Walker; Miss E. Beldon.

The Judges were—for *Poultry*, Mr. Nathan Marlor, Denton, Manchester; and Mr. Jackson, York. For *Pigeons*, Mr. G. Robson, Hull.

COTTINGHAM POULTRY SHOW.

THE annual Exhibition of poultry in connection with the Floral and Horticultural Society's Show, was held at Cottingham on Wednesday, September 2nd, in a field kindly lent for the occasion by Mrs. Gee. Rain fell rather copiously during the previous night, and throughout the morning heavy threatening clouds often obscured the sky; but thanks to the high winds which prevailed during the day, they were driven onwards to some less-favoured locality, and the pleasure-seekers in connection with this Show had fair weather with occasional outbreaks of sunshine, which enabled them to enjoy the goodly sight. Bands of music gave forth their melody, and a large concourse of visitors enlivened the scene.

Some very excellent birds were shown in the Various classes, and in some there was strong competition, about 250 pens being entered; the fanciers of the district being well represented in both poultry and Pigeons. Subjoined is a list of the awards:—

SPANISH.—First, G. Pashley, Hull. Second, R. M. Stark, Hull. Highly Commended, O. A. Young, Driffield. *CHICKENS*.—First, R. M. Stark. Second, J. Holmes, North Cave. Highly Commended, Mrs. Ward, North Cliff.

DORKINGS.—First, R. M. Stark. Second, O. A. Young. Highly Commended, R. M. Stark. *CHICKENS*.—First, H. Elvidge, Leven Carr. Second, W. Watson, Bishop Burton. Highly Commended, O. A. Young.

COCHIN-CHINA (Black or White).—First, D. Bromley, Cottingham. Second, R. Loft, Woodmansey. *CHICKENS*.—First and Second, W. Maynard, Ganton.

COCHIN-CHINA (Any other variety).—First, R. Clark, South Dalton. Second, T. C. Trotter, Sutton. *CHICKENS*.—First, H. Taylor, Newland. Second, T. C. Trotter.

GAME (Black-breasted).—First, J. Hodgkinson, Hull. Second, H. Adams, Beverley. Highly Commended, H. Adams. *CHICKENS*.—First, W. Burgess. Second, H. Adams. Highly Commended, H. Adams.

GAME (Any other variety).—First and Second, H. Adams. *CHICKENS*.—First and Second, H. Adams. (Whole class Highly Commended.)

POLANDS.—First, J. Stephenson, Preston. Second, R. Loft. *CHICKENS*.—First and Second, R. Loft.

HAMBURGH (Golden-spangled).—First, J. Blanshard, Driffield. Second, G. Holmes, Driffield. *CHICKENS*.—First and Second, J. Murgatroyd, Blahoy Burton.

HAMBURGH (Silver-spangled).—First and Second, S. Campling, Cottingham. *CHICKENS*.—First and Second, S. Campling.

HAMBURGH (Golden-pencilled).—First, W. Gofton, Driffield. Second, G. Pashley. *CHICKENS*.—First, J. Bilton, Cottingham. Second, W. Gofton.

HAMBURGH (Silver-pencilled).—First, T. C. Trotter. Second, J. Bilton. *CHICKENS*.—First and Second, S. A. and J. Faulkner, Hunmanby.

BANTAMS (Gold-laced).—First, O. A. Young. Second, R. M. Stark. *CHICKENS*.—First W. Gofton. Second, R. Green, Brantingham.

BANTAMS (Game).—First, R. M. Stark. Second, J. R. Jeasop, Hull. Highly Commended, J. Cranidge. *CHICKENS*.—First, G. Holme. Second, W. Gofton.

BANTAMS (Any other variety).—First and Second, R. M. Stark (Silver-laced and Black). *CHICKENS*.—First, G. Pashley (White). Second, E. Carling, Cottingham.

ANY DISTINCT VARIETY.—First, H. Adams (Black *Hamburghs*). Second, O. A. Young (Malays). Highly Commended, J. Pares, Chertsey; E. Proctor. *CHICKENS*.—First, J. Pares (Brahmas). Second, O. A. Young.

FARMYARD CROSS.—First, Mrs. White, Thearne. Second, R. Goulden, Bridlington. *CHICKENS*.—First, G. Loft. Second, G. Bromley. Highly Commended, G. Bromley.

GAME COCK (Any age or colour).—First and Second, H. Adams. Third, J. Cranidge, Louth.

GUINEA FOWLS.—First, H. Merkin, Driffield. Second, J. R. Jeasop.

TURKEYS.—First, R. M. Stark. Second, O. A. Young.

GREENS.—First, O. A. Young. Second, R. Voakes, Driffield. Highly Commended, O. A. Young.

DUCKS (Aylesbury).—First, R. M. Stark. Second, O. A. Young.

Ducks (Bouen).—First, T. C. Trotter. Second, R. M. Stark. Highly Commended, R. M. Stark.
 Ducks (Any other variety).—First, J. R. Jessop (East-Indian). Second, R. M. Stark (East-Indian). Highly Commended, R. Gowden, Bridlington.
 Pigeons.—*Croppers*.—First, W. Watson, Beverley. Second, W. Witty, jun., Cotingham. *Carriers*.—First, W. Watson. Second, T. Ellington, Woodmansey. *Trumpeters*.—First, F. They, Beverley. Second, H. Yardley, Birmingham. *Jacobins*.—First, J. R. Jessop. Second, T. Ellington. Highly Commended, T. Ellington. *Fantails*.—First, T. Ellington. Second, W. Watson. *Tumblers*.—First, F. They. Second, J. R. Jessop. Highly Commended, G. Jerratt, Hull. *Barbs*.—First, T. Ellington. Second, W. Witty, jun. *Nuns*.—First, F. They. Second, J. R. Jessop. *Any other variety*.—First, H. Yardley (Owls). Second, J. R. Jessop (Turbits). Highly Commended, T. Stathers.
 Rabbits.—First, G. Teal. Second, G. Loft.

The Judges were M. Hunter, Esq., Green Hamerton, near York, and F. Ferguson, Esq., Easby Park, near Beverley.

PRIZES AT THE LAST SHEFFIELD POULTRY SHOW.

"EXHIBITOR" inquired last week if the prizes at this Show were already paid, and in reply I can inform him they are not, nor do I think them likely to be. I wrote to the Secretary four times on the subject before I could get an answer, which all your readers will agree is very bad policy on the part of a manager of affairs. Being rather put out at receiving no answer after posting the third letter, I thought I would see what a fourth would do in rather strong terms. This immediately brought a supplicating letter as follows:—

"I deeply regret that your previous letters have been unanswered, but I have been from home about a month engaged on business, and the party who should have attended to the correspondence must have neglected it; and I am still further sorry to say, that owing to many difficulties thrown in the way of the Show by several members of last year's Exhibition Committee, it resulted in a total failure. This, added to the fact of my other speculations (before and since the Show), being singularly unfortunate, I am compelled to resort by pressure of my creditors to the Court of Bankruptcy to relieve me from my difficulties; and although I may be released from my debts, you may depend I shall feel it both a pleasure and a duty (should I at some future time attain a position to discharge your claim), to do so."

What is the proper epithet to apply to a man who takes everything upon his own responsibility, the financial department included, holds the Show, gives it out as a complete failure, pockets the entrance fees, &c., without paying a single farthing as prize-money, and takes himself out for a month or more on business, as he calls it?

Do you think there is any possibility of the money eventually being paid?

I hope this subject will not cease without a little discussion and investigation.—ALFUS EXHIBITOR.

[If there was any Committee for managing the Sheffield Poultry Show all its members are bound in honour, and may be in law, to pay the prizes awarded. If, on the other hand, as you say, the Secretary, now a bankrupt, "undertook everything," and the exhibitors accepted his sole responsibility, we agree with you that the prizes are "not likely to be paid;" but those entitled to them might prove as creditors against the bankrupt's estate.—EDS. J. OF H.]

BEE-KEEPING IN DEVON.—No. XXI.

A TRIP TO THE SEASIDE.

I've been to the seaside—

"O yes; I know," mentally interpolates the reader. "Bathing machines, Bath chairs, perambulators, importunate donkey-boys, circulating library, lots of children at the diggings, used-up dandies, ultra-fashionable young ladies in balloon skirts, pilfering landlady, bad cooking, and worse attendance."

Not a bit of it, my dear Sir or Madam. I've been to a little hamlet in the wilds of North Devon, nine miles from a market town, four miles from the butcher's, a couple of miles from a letter-box, and the same distance from church, perfectly free from the abominations you have recited, where we could do as we liked, and enjoy to the uttermost a fine open sea (Lundy Island in the distance, but beyond that the red Atlantic was to be seen) and in a straight line nearer than

America), and an excellent beach. Oh! the delights of that happy time, when we lodged in the quaintest of farm-houses, with doorways and cross-beams in the ceilings that barely cleared one's head; bedroom doors made in the primitive fashion of three rough planks nailed to cross pieces at the top and bottom, and secured by a wooden latch, over which I stuck my penknife to guard against accidental intrusion. What shouts of laughter arose the first morning, when the children found themselves imprisoned by the misbehaviour of the only iron latch that our dormitories boasted, and were ultimately released by a vigorous application of the shoulder to the outside. What fun it was when, neglected by the butcher, and with no poultry immediately available, we were reduced to dine upon eggs and bacon fried to a turn by that excellent farmer's wife whose cookery was always perfection, and brought in hot and crisp by her buxom daughter, at once the most obliging and efficient of attendants. What jolly rides we had in the spring cart driven by the good-natured farmer himself, and drawn by his stalwart horse sixteen hands high and rising five years old, that would walk more than four miles an hour, and trot something like fourteen without a touch of the whip, which in fact his driver never carried. Not a little proud was he of this really fine animal, which had been bred by himself; nor was he ever tired of expatiating on his courage, fine temper, and manifold good qualities. Did we not ride in this way over Woollacombe Sands, three miles long, and listen with moistening eyes and bated breath whilst our conductor related how, two winters ago, nine stout ships failed to weather the Morte (*anglice*, death) Rock at the entrance of the Bristol Channel, and all came ashore here and went to pieces in one fatal night, when eight out of their nine crews were drowned, with the exception of two men who alone survived to tell the tale? With what interest did we look at that gorse covert where, in almost the last stage of exhaustion, the master and sole survivor of his ship's crew dragged himself one dark night, and with nails torn off and fingers lacerated by clinging for dear life to those rugged rocks against which he had been hurled by the pitiless breakers, laid himself down in utter ignorance of his position until the grey light of dawn enabled him to crawl to a habitation some two or three miles inland. How surprised were we when on arriving at the little village of Morthoe we suddenly found ourselves in the midst of donkeys and civilisation in the shape of visitors from Ilfracombe. Need I say that the children were rather impatient of the time we devoted to the examination of the ancient church recently restored by the munificence of the incumbent, and containing the remains and a monument to the memory of Tracey, one of the murderers of Thomas à Becket, by whom it was founded seven hundred years ago, or describe with what delight they scrambled on donkeyback, and set off down the hill to enjoy a gallop on the sands, and pick up shells at Barrycane? Then came a plunge into the sea and a battle with the breakers, resulting in a glorious swim outside, alternately lifted on the top of a watery hill and then sinking into a dark green valley extending on either hand as far as the eye could reach, as we rose and fell with the long swell of the Atlantic.

"Now, Mr. Bee-keeper, this is all very well; but don't you know that Kingsley has described North Devon scenes and characters far better than you can ever hope to do? and that when you last went to the seaside you dwelt in stylish lodgings at a fashionable watering-place, where you visited and were visited by your bee-keeping friend who assumes the convivial initials, and that you declared you were very comfortable, and enjoyed it immensely? and don't you know what somebody says in that nasty Latin which I never could understand, something about a *knee* and a *suitor*, which I thought was very interesting to ladies, but which I am told means only that a cobbler should stick to his last? and so, of course, a bee-keeper should stick to his bees, for you know a parson should—"

Yes, yes, my dear Madam, I do know, and fully admit the justice of all that you would urge, but I am coming to the bees presently; and in the meantime you may allow me to tell in my own way how much we enjoyed ourselves, for I have a couple of keen Editors over my head with two pairs of sharp scissors in their hands, by one or the other of which

• No soldier will be permitted to let the cobbler go beyond his last.

the thread of my discourse will be cut short the moment they think it degenerating into twaddle. You will not, I am sure, object to my telling how the daughter of the rector was married during the first week of our sojourn, and that two of the young ladies of our party, whose curiosity led them to witness the ceremony, returned hot and tired from their walk, which turned out longer than they anticipated, but declared that the bride was beautiful, the bridesmaids charming, and the bridegroom a gentleman. On going to church the following Sunday, the aforesaid young ladies acted as pioneers, being supposed perfectly acquainted with the road; but as they outwalked their elders, we had to inquire the way, which resulted in our reaching the church before them; and it was not until the choir had done practising, and "Home, Sweet Home," had been played as a voluntary on the appearance of the clergyman, and the service was pretty well advanced, that they made their appearance, having lost much time in seeking us on the road they had taken, which had also the disadvantage of prolonging their walk to four miles instead of two.

And so the first week passed. THE JOURNAL OF HORTICULTURE, of course, duly arrived (could I have existed without it?), but I was in no humour for writing on bee matters. Even the expression of Mr. Lowe's "surprise" (will he ever forgive my treating his admonitions so irreverently?) at my "lamentable plaint," only moved me to laughter, and I fully enjoyed the joke of seeing his grave rebuke side by side by the article which pronounced my apiary to be "convalescent," and contained within itself, as I thought, sufficient evidence that my "undaunted spirit" had by no means deserted me.

During the second week the ruling spirit awoke within me, and I made the acquaintance of Mrs. S., wife of farmer S., who possessed three old stocks, from which had issued five swarms, making eight in all, which stood in a small garden in front of the house. At her request I "hefted" them one by one, and was astonished at their weight. With the exception of a very late swarm (and even this was nearly 20 lbs.), not one weighed so little as 40 lbs., and some were certainly above 50 lbs. After a little conversation I obtained permission to drive a swarm—a second swarm of this year—which, nevertheless, weighed above 50 lbs., and was so full of bees that large masses were clustered outside. Having to write to Exeter for bee-apparatus, the following Saturday morning was fixed for the operation, and in the meantime I raised the hive from its floor-board (certainly a misnomer for a slab of slate) on three stones, in the hope that the current of air thus produced would compel the out-lying bees to seek shelter within.

On presenting myself at the appointed time I was introduced to the worthy bee-master, who testified no small interest in my proceedings; but I was also rather disconcerted at finding nearly the whole adult population of the village assembled to witness an exploit of which they had never before heard, and as to the accomplishment of which they were evidently incredulous. Having inducted myself into a bee-dress, and placed a couple of spare ones at the service of the timid among the spectators, but of which none would avail themselves, I proceeded to business by exerting my utmost strength in steadily inverting the ponderous hive on a pail; but in doing this I became aware that the precaution I had taken of previously raising it had been of little avail, since the back and sides were still covered with clustering bees. Placing an empty hive over the full one, it became necessary to dislodge the outsiders before securing the two hives together with a cloth. This was quickly done by sweeping them off with a feather; but what an outcry arose among the spectators! shouts and screams were overborne by roars of laughter, and the fun became fast and furious as one by one rushed frantically into the house, followed by the shouts and laughter of their companions. Foremost and loudest in the enjoyment of the joke was Mr. S.'s father, who valorously kept the field after his descendant had beaten an ignominious retreat. His triumph was, however, of short duration, as I was soon made aware by the appearance of his son at the front door, gesticulating with delight, and exclaiming, "Feyther's a-sting'd! feyther's a-sting'd! He'th a got et at last!"

But when the confined bees had been conveyed into the back garden, and had been sufficiently subdued by con-

tinuous rapping to admit of my removing the cloth and raising one side of the empty hive—and when, uncovering my own face to encourage them, I invited the spectators to witness the ascent of the remaining bees, their astonishment was unbounded; and I believe one spoke the sentiments of the majority when he expressed his conviction that I had "a-charm'd 'em."

The anger of the out-lying bees in the front garden at being so unceremoniously dislodged was, however, by no means appeased. Steady cart-horses shook their heads as they approached the house, snorted wildly, and turning short round set off on a return trip at vastly accelerated speed, despite the loud and oft-repeated "Whoa's" of their distracted drivers. Whilst restoring the bees to their original position, but in an unfurnished dwelling, I saw a frantic shoemaker charge wildly down the hill fighting desperately with hat in hand in the vain endeavour to distance or keep at bay a score of winged assailants which plied their weapons without mercy. When cutting out the combs afterwards, Mrs. S. came in with the information that a sack of flour had been left at the door. "What d'ye main?" said her husband. "I don't want no zack o' flour." The explanation was that the miller was passing on horseback with a sack of flour, when his horse took fright and incontinently deposited his load on the spot.

Altogether the driving of farmer S.'s bees was nothing less than a nine days' wonder, and it was declared on all hands that the inhabitants of the village of C— would long remember the visit and the exploits of—A DEVONSHIRE BEE-KEEPER.

UNITING BEES.

I AM a beginner in bee-keeping. I have five hives, four of them swarms that I mean to keep, one an old hive, dome-shaped, that I mean to rob. Will you tell me the best way of adding the bees of this hive to one of my others?

In looking over your back Numbers I see one of your correspondents recommends us by a smart blow to shake them out into the other hive. Not knowing the exact amount of smartness required, I am afraid of sending out combs and honey with one. Is it a safe operation? or is the tedious work of driving better? and which is the best time for it?—WYSEIDE.

[The best mode of uniting bees in common hives is by driving in the middle of a fine day, as directed in "Bee-keeping for the Many" (page 59, new edition). You must have mistaken our correspondent's meaning, who doubtless referred to bees clustered in an unfurnished hive. A blow smart enough to dislodge the bees of an old stock with well-filled combs must, as you surmise, send combs and honey with them.]

EXPERIMENTING ON BEES AND FOUL BROOD.

I THINK there is not a reader of your valuable paper, that keeps bees, who is not very much indebted to "A DEVONSHIRE BEE-KEEPER" for the information he is so ready to give. Had it not have been for his letters many bee-keepers would have lost their bees. The dwindling away of his apiary has nothing whatever to do with its being an experimental one, but has arisen from his introducing the disease to it. I think if his brother apiarians had lent their assistance in endeavouring to find out the cause, it would have been more like brother fanciers than to dilate on his misfortunes. His coming so freely forward and stating his loss will be the saving of many a hive of bees to other apiarians, for had it not been for his letters I should have lost the hive as stated in your paper of the 25th ult., and have also introduced the disease into my apiary.—A. W.

WAX MOTHS.

LAST September one of my strongest stocks of bees was observed to be in great commotion. The bees made almost as much noise as when they swarm, and multitudes of them came in at the open windows of the house to the great disturbance of the family.

About a month ago I lifted up the hive and found the entire comb reduced to a mass of decay, appearing almost like yellow moss. In the centre there was a large cone attached to the roof, of which I have broken off a piece, and forward it to you by this post. The top of the hive was also covered with single cocoons like those in the enclosed mass. Each appears to contain a grub, and the moth which I enclose was adhering dead to the side of the hive. It appears to me (who have very little knowledge of these things), to be one that has come forth from the chrysalis, but that never has flown.—S. E.

[This inquiry reached us in March last, but none of the moths came to perfection until the 30th July. They turn out to be *Galleria mellonella* (Linnaeus), probably the worst kind of wax moth, and appear, as far as we can judge by the illustrations in Mr. Langstroth's work, to be identical with the species which is so much dreaded by American apiarians. The male is the *G. cereana* of Linnaeus, *G. cerella* of Guénée, and is smaller than the females, which also it outnumbers by about twenty to one. Fortunately it is scarce in this country, and the mass of cocoons you sent have proved quite a boon to all the entomologists in our neighbourhood.]

A NEW AND SUPERIOR MATERIAL FOR HIVE-MAKING.

ONE consequence of my trip to north Devon, the incidents of which have been already described, is the discovery of a new material for hive-making, which promises the best results. It is *Elymus arenarius*, or Upright Sea Lyme Grass, which grows plentifully on the sand-hills in many parts of our coasts, and the principal use of which is to bind sand-banks so as to prevent encroachments of the sea, and keep the sand itself from drifting during high winds. The dwellers on the north coast of Devon have also applied it to the manufacture of a cheap kind of broom, as well as a substitute for straw in hive-making. Being informed that hives fabricated of this material were much neater than, and lasted thrice as long as, those made of straw, I purchased and brought away with me a sufficient quantity for a Woodbury frame-hive. This I have placed in the hands of Messrs. Neighbour & Sons' hive-maker, who eulogises it most highly; and if it at all equals his expectations, the apiarian world may hereafter rejoice in the fact that the cottagers of north Devon, although much behind the rest of us in many respects, were yet able to afford a valuable hint to—A DEVONSHIRE BEE-KEEPER.

FOUL BROOD PRODUCED BY FEEDING BEES WITH FOREIGN HONEY.

I WAS sorry to see the report in THE JOURNAL OF HORTICULTURE, of July 21st and 28th, of "A DEVONSHIRE BEE-KEEPER'S" apiary suffering from foul brood, and am afraid he has not yet found out the right cause. I have been a bee-keeper now some thirty years, and have only known one case of foul brood from English honey. It was a hive which had been sent to the moors and came back about 60 lbs. weight, when the owner set it up for winter stock. The following spring the bees did not appear to increase, but gradually dwindled away, and when the bee-keeper came to examine his hive he found the combs and honey cankered, and disagreeable in smell.

I will give my own experience. About twelve years ago I bought a quantity of foreign honey for myself and friend. I gave to one of my stocks a quantity of the honey just as it was, and the following spring the bees commenced working as usual; but still they never increased, and, besides, I perceived some of the bees crept out and died. So I turned up the stock and examined it. The combs were partly covered with a brown substance, and the smell from it was most offensive. Besides this, the combs were nearly rotten, and the few bees left were crawling about, poisoned with the honey and foul smell. The honey I sold to my friend he boiled along with lump sugar, and the following spring part of his bees died, but towards the latter end of April they partially recovered their strength, but were not as good

hives as they ought to have been at that season. Both my friend and myself laid the blame at the time to the foreign honey, as my hives, which had all honey given them, dwindled completely away, whilst his which had only part honey mixed with sugar, recovered after losing part of their bees. If "A DEVONSHIRE BEE-KEEPER" has fed his bees with foreign honey, I should say that is the cause of the disease. I merely suggest this from my own experience, and I have never used foreign honey since.—C. B. H.

[This narrative confirms the correctness of German apiarians, who state that foul brood is usually produced by feeding bees with imported honey. In my own case, however, I have no reason to believe that it had anything to do with the misfortune, since, although I used a portion of foreign honey, I parted with some of it to my friends, Messrs. S. B. and George Fox, in neither of whose apiaries were any evil effects produced by its use.—A DEVONSHIRE BEE-KEEPER.]

BEES IN CUMBERLAND.

PERHAPS a short account of apiarian doings in Cumberland may be interesting, and I will, therefore, write a few lines upon the subject if you think them worthy of publication.

In the first place, I may say that it has been generally considered a very favourable season, although swarms were not so early this year as last. The first that I heard of was on the 30th of May, and during the first week in June they were frequent; and for numbers a very old bee-keeper assured me he never knew such a season, he having a top swarm which swarmed four times, two of which swarms he lost. Another individual has a hive which has swarmed seven times since the 19th of June last, all of which swarms he secured; and another person has a hive which swarmed twice in one day. So much for swarming.

I have watched with interest the progress of the Ligurian species, and rejoice to hear that they have acquitted themselves so well; but I think they must not be allowed to carry off all the honour and glory. An old friend of mine who has been a successful bee-keeper with the cottage straw hive, although knowing little about bees scientifically (calling the queen "the Maister Bee"), took from a hive a top swarm lately, which weighed 8 stone 2 lbs., and a top he took off the same hive before weighed 8 lbs. That, I think, the Ligurians will find it difficult to exceed. I have often thought that the elevation of the bee-stand has a considerable influence upon their successful swarming. If too high they are apt to fly away, and if on the level they are very slow in swarming. A gentle elevation I think answers best. A few hives under my own care stand low, and the swarming was so tedious that I have practised artificial swarming for the last ten years by driving, and always with success. I only once failed in driving the queen at the first operation—five minutes I find sufficient time to drive. A bee-dress or gloves I never think of. A few puffs of smoke from a puff-ball keep them quiet.

With regard to family affairs, I have kept them quite dark; but, if it be true that Huber heard them speaking the French language, some of your readers that speak French might inquire if they are at all sensitive upon the subject.—A FRIEND OF THE BEE.

OUR LETTER BOX.

SHEFFIELD POULTRY SHOW.—In reply to "EXHIBITOR," R. H. Nicholas and T. Davies, of Newport, Monmouthshire, beg to state that they have not received their prize money from the late Show.

RABBITS KILLING THEIR YOUNG (F. M. Parkes).—The only cure is to kill the infanticide.

TAKING HONEY.—HUMBLE BEES (A. G.).—Honey may be taken as soon as the honey-harvest is over, but this varies very much in different localities. In some districts all increase ceases in July, whilst in others it continues till October. The bees you have purchased belong to the only species of hive bee indigenous to Britain. The large, heavy, black-velvety bees you describe are a species of wild humble bee, the females of which alone survive the winter. They do not store honey like the hive bee, and their natural history precludes their being domesticated in the same manner.

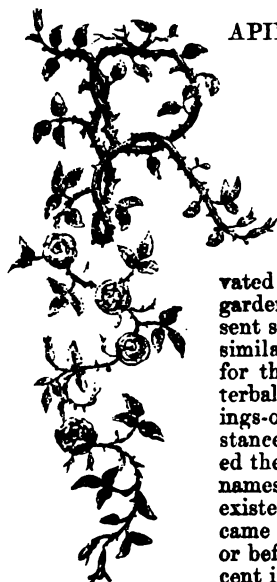
WORK ON BEES (Not an Old Subscriber).—You will find all hives worth notice described, and many depicted, in the fifth edition of "Bee-keeping for the Many," just published at our office. You can have it free by post for six penny postage stamps. All communications to our departmental writers must be in the pages of our Journal.

SQUIRRELS (—).—You will find an article on the subject in our next Number.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	SEPTEMBER 15-21, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
15	Tu	A. L. Jussieu died, 1836. Bot.	67.0	46.5	56.7	18	36 45	15 46	17 48	38 46	2	4 44	258
16	W	EMER WEEK.	68.1	48.1	56.1	15	37 6	13 6	17 9	5 7	3	5 5	259
17	Th	<i>Silene maritima</i> flowers.	68.8	46.4	57.0	14	39 5	10 6	19 10	38 7	4	5 26	260
18	F	Prof. J. F. Johnston died, 1855.	68.5	44.5	55.4	17	40 5	8 6	19 11	20 8	5	5 47	261
19	S	<i>Arenaria ciliata</i> flowers.	68 6	45 2	56.9	18	42 5	6 6	14 0	13 9	6	6 8	262
20	SUN	16 SUNDAY AFTER TRINITY.	66.8	44.0	55.4	16	44 5	3 6	13 1	15 10	7	6 29	263
21	M	St. MATTHEW.	64.9	45.0	55.0	19	45 5	1 6	40 2	28 11	8	6 50	264

From observations taken near London during the last thirty-six years, the average day temperature of the week is 66.9°, and its night temperature 45.7°. The greatest heat was 84°, on the 17th, 1843; and the lowest cold, 29°, on the 17th, 1840. The greatest fall of rain was 0.90 inch.

AMARANTHUS MELANCHOLICUS RUBER AND
COLEUS VERSCHAFFELTI.

APID though the increase of plants has been which the enterprise of collectors sent to distant lands has placed within our reach, and notwithstanding the many improvements which the hybridisers of the present day have effected in bedding plants, it is questionable whether the plants cultivated in the most fashionable flower gardens of the present time present so large an array of names as similar lists did fifteen years ago; for the yearly additions are counterbalanced by corresponding weedings-out. Probably in many instances the latter work has exceeded the former, so as to leave fewer names on the flower-garden list than existed before variegated plants became such an important feature; or before the *Cuphea* and more recent introductions found their way into general use. That successive

weedings-out are wanted there can be no doubt; and some go to great extremes in this respect; while others, anxious as much to retain a collection as to produce an effect, preserve a longer list of names. There are, however, plants which have gone out of fashion through the current of public opinion having set in against them, and this latter class is every year receiving fresh accessions, often from plants that have scarcely had a fair trial.

So fastidious have our flower-gardening connoisseurs become of late, that it is not an easy matter to please them now. The properties possessed by a plant are far more carefully examined than years ago. To be a favourite in the flower garden now it is requisite that a plant be ornamental from June until November, no lack of servitude during that period being permitted. A freedom but not rankness in growth is also required, as well as sufficient hardiness to withstand cold winds, and many other points of merit. This strict and almost unreasonable service on the part of a plant has of necessity in some cases driven flowers from the stage, and substituted foliage instead, the latter being more constant and lasting; and the increasing use of foliage instead of flowers in our flower gardens threatens to drive the latter from the field; but a change in public opinion may take place, and flowers be again in the ascendant. Now and then, however, useful additions in the way of coloured foliage have been tried with good effect. The *Perilla* is grown in many places to a large extent; and not long ago, in a popular flower garden in Yorkshire, I noticed

that Red Beet had been introduced into the flower-beds with tolerably good effect. Purple Orach had been tried many years before, but its use is now on the decline; the more accommodating habit of *Perilla* fitting it better for the various duties a plant of extraordinary-coloured foliage is called on to fulfil, and in its peculiar tint perhaps no more suitable plant could be had. There are, however, other plants to which it would be desirable to give a trial for out-door work of this kind, and probably with a little coaxing at starting they might do good service.

The *AMARANTHUS MELANCHOLICUS RUBER*, which I acknowledge to having recommended to the notice of all flower-gardeners last year, has, in a very great many cases, failed this season in giving that satisfaction which it was expected to afford; and at several gardens which I lately had an opportunity of seeing in Lancashire, Yorkshire, and adjoining counties, it was pronounced a complete failure. I confess to having my own misgivings as to its utility in the early part of the season. Since then, however, or rather since the last week in July, it has made rapid progress in the garden here, and at the present time (September 1), it is second to no plant in the garden for general effect; and a plant with a better habit could not well be conceived. I have two rows of it forming lines of colouring in two striped or ribbon-borders, consisting of four rows each, which are respectively *Lobelia speciosa*, yellow *Calceolaria*, this *Amaranthus*, and *Cloth of Gold Geranium*. The three plants which form its companions are well known, and the *Calceolaria* and *Lobelia* are generally regarded as free growers. The *Geranium Cloth of Gold* is not so free; but the *Amaranthus* at the present time far outstrips them all. The foliage from the spreading branches having touched the ground on all sides it has been necessary to stop, otherwise it would have spread over the adjoining *Calceolarias* and *Geraniums*. The colour, I may observe, is of that rich purple-crimson which contrasts so well with everything around it; and looking at it either in the direction of the sun or the reverse way it is equally beautiful, although it must be observed that there is a difference in the tints it presents when viewed in opposite directions. Its utility is, however, so well established, that I feel disposed to give it a more extended trial next year, but will treat it in a somewhat different manner, having learned from experience that the usual treatment given to ordinary bedding plants is not alike suitable for all.

Taking a view of the treatment which the four varieties of plants forming the ribbon-border above mentioned received, I would observe that the *Calceolaria Aurca floribunda* was planted out some time about the middle of April. Some in another place were planted out earlier than that and did well; but the *Geranium*, *Lobelia*, and *Amaranthus* were all planted at one time, the second week in May—too soon for the *Amaranthus*, as the sequel proved; for a great many of the plants dwindled away, forming a sort of abortive seed-stem. The places of those which failed were filled up about the beginning

of June, and up to the end of that month plants were occasionally put in, but it was not until the middle of July that any show was made, the Calceolaria and Lobelia having done good service in the flowering way for some time. It was now the time for the Amaranthus to show its good qualities, for the dry warm weather which set in with July was just the weather that suited it, and just what the Calceolaria and Lobelia did not like. The Calceolaria, after an unusual display of bloom in July and August, is now almost done for; the dry weather not having favoured its growth a succession of flowers has not been formed, and it is too late to expect them now. The Lobelia has done better, and is still gay and likely to be so; the Geranium has made little progress; and now, as before stated, the Amaranthus requires rather severe amputations to keep it in its due proportion of height and width.

Now, taking the merits of this Amaranthus in competition with the Perilla, I have no hesitation whatever in giving the preference to the latter for early and general work in all but the most favoured places, as the Perilla may be planted early in May and succeed well. Even seedling plants taken from the hotbed with scarcely any hardening-off, and planted out of doors, have done tolerably well, but, of course, better when they were hardened-off a little. The Amaranthus most certainly will never endure this. But it has its merits: when it does grow and prosper it far excels the Perilla in appearance; the rich hue it presents contrasting strongly with the bronze tone of the Perilla, while the habit of the plant is equally good—indeed better in many respects, being more disposed to spread than the Perilla, and as an individual plant much its superior. That it may be so treated as to become a more useful member of the flower-gardening family I have no doubt; but I fear it requires a greater amount of warmth or sunshine than it can receive in the north of England, excepting in unusually fine summers. It is, however, well worth trying; and the experience of the present year points out that it is not prudent, even in favoured places, to plant it out before June, and by so doing it is likely it may be made a useful adjunct to the flower garden.

COLEUS VERSCHAFFELTI.—While speaking of the Amaranthus it is but right to mention this plant also, which was announced as likely to answer as a bedding plant. In my case, I am sorry to say it has fallen short of what the Amaranthus has become, but I did not plant so much of it. A bed in a geometric garden was, however, planted with this Coleus, and as it was well sheltered from the north and east I expected it would have done well; but the plants, which were, like most others, all planted before the middle of May, made little or no progress until the middle of August; and since then they have grown a little, but the colour is not that rich hue which the plant has while in the hothouse. I will, however, speak of this plant later in the season, or perhaps some one else will do so. My experience of it goes to prove that it is less promising than the Amaranthus, but I believe this is not the universal opinion. Certainly the only plants of it that I have seen doing well had not been long out of the hothouse, so that they could not be said to have grown out of doors. In hot dry summers like 1858 and 1859 I have no doubt that it will succeed; but summers suitable for growing stove plants out of doors are not of yearly occurrence, so we must wait for one to try those delicate ornaments outside with something like a prospect of success. It is many years since I tried *Torenia asiatica* as a bedding plant with *Pentas carnea* and some others with a fair share of success in a hot year, but I met with a complete failure in a dull damp one. Since then I believe Begonias have been tried with like success. That it is desirable to make such experiments cannot be denied, but it is better to hold fast to such tried friends as never deceive us for doing service in important places, and to let those on probation have a berth to themselves which will afford them every advantage for doing well; and if they do so let their culture be extended another year, taking care, however, not to be deceived by the well-doing of a plant in a season well adapted for it, so as to be led to expect that it will do equally well in one of a contrary description.

Having extended the above remarks to a greater length than I intended, I must defer until another opportunity the somewhat ungracious task of "weeding" the flower garden

of its useless or superfluous occupants. I would also be glad to have the opinion of others on this head, and would suggest that each writer should class his favourites under different heads—as Class 1, which might include only the very best; Class 2, a secondary section; and Class 3, those which might be used occasionally; but any other arrangement that would convey the idea intended to be expressed would do. The introduction of a new plant is not more serviceable to the gardening community than the removal of existing useless ones, and a good and fearless weeding-out will be of much service.—J. ROBSON.

THE ROYAL HORTICULTURAL SOCIETY'S EXHIBITION.—SEPTEMBER 9TH.

ON this occasion the Exhibition was held in the deserted saloons of the French refreshment department of the Exhibition building, and the attendance of visitors was such as to render the propriety of holding exhibitions in September very questionable indeed. Those who have country seats have now retired to them; those who are sportsmen are thinking of sport; the larger class of tradesmen with their families are either off for their holiday to the seaside, to the north, or to the continent, or have just returned and have no time to spare; and there only remain those who are chained to the wheel of business, and who, therefore, are amongst the least likely to come in force to flower shows. So numerous, too, have these been this summer, occurring week after week, and too often presenting the same general features, that the public have tired of them, and would now gladly rest for a season. Rain in the morning, continued in some parts round London till noon, combined with a lowering sky, warning drops of rain, and every indication of an approaching thunder-storm, no doubt served, in addition to the above causes, to deter many from visiting the Exhibition; but fortunately, however, during the time this lasted the weather remained fair, though not fine, and it was not till ten o'clock at night that a sharp thunderstorm came on, accompanied by such a downpouring of rain as would have ruined the hopes of many an exhibitor had it occurred on the previous day.

The productions which were exhibited were arranged in four divisions, no one of which could be seen from the other—an arrangement which from the internal nature of the building was inevitable, but which had the effect of spoiling the Exhibition as a whole. It presented no long vista, as at the Crystal Palace, of flowers and fruit—no long array of earnest gazers—and, consequently, being taken in detail, no grand impression could be produced. The rapid demolition going on in the Exhibition building, and visible in all its nakedness through several glass doors, was also little in harmony with what should have been a scene of beauty, although it seemed to be viewed by the visitors with a feeling of complacency rather than otherwise.

We now come to the particulars of the Show itself, which, with the exception of some things in the Miscellaneous Class and those submitted to the Floral Committee, consisted principally of Dahlias, Hollyhocks, Asters, and Gladioli, all of which, and particularly the first and last, were shown in great perfection.

DAHLIAS were even finer than they were at the Crystal Palace, and Mr. Turner and Mr. Keynes again took off the principal prizes in the Nurserymen's Classes.

In 48's no stand could have been finer than that of Mr. Turner; his blooms appeared at the Crystal Palace as if they could not have been surpassed, but on this occasion they were still larger, still more perfect. It would have been impossible to have picked out an inferior bloom among the whole, and it would be tedious to merely give the list of their names, but the following are some of the most striking—viz., Norfolk Hero, Warrior, Sidney Herbert, Mr. Stocken, Criterion, Goldfinder, Pre-eminent, Mrs. Henshaw, Lord Palmerston, Chairman, Bob Ridley, Charlotte Dorling, Earl of Shaftesbury, Beauty of Hilperton, Princess of Prussia (a beautiful canary yellow), Lord Derby, Juno, and Hugh Miller. In the second-prize stand from Mr. Keynes, the blooms were not generally so large, nor were some of them so perfect as Mr. Turner's. Criterion, Lord Derby, Regency, Penny Purchase (a fine yellow), Sir J. Douglas, and

Bob Ridley, were some of the most remarkable. Mr. Cattell, of Westerham, was third with an excellent stand, in which we noticed Criterion, Lord Derby, George Elliott, Cygnet, and Charlotte Dorling.

In 24's Mr. Turner was also first with Criterion, George Elliott, Umpire, Mauve Queen, Midnight, Bob Ridley, Juno, Goldfinder, Lord Palmerston, Norfolk Hero, Mr. Stocken, Lord Derby, Andrew Dodds, Delicata, and others. Mr. Keynes was second—Baron Taunton, Anna Keynes, King of Sweden, Leopard, Fanny Purchase, and John Wyatt, being some of the best; and Mr. Perkins, of Northampton, was third, his blooms being also good. Mr. Legge, of Edmonton, Mr. Cattell, and Messrs. Garraway, of Durdham Down, were also competitors.

In the Amateurs' Class of eighteen, Mr. Thornycroft, of Floore, near Weedon, was first, with some very fine blooms of Norfolk Hero, John Dory, Cygnet, Mrs. Piggott, Hugh Miller, Juno, Lord Derby, Mrs. Henshaw, Volunteer, Mr. Critchett, Andrew Dodds, Admiral Dundas, Baron Taunton, Lilac Queen, Model, Lady Popham, Lord Palmerston, and British Triumph. T. Charlton, Esq., of Kebworth, was second with a capital stand, in which there were many of the kinds already named. Mr. Corp, of Milford, was third; and the Rev. Mr. Fellowes, of Shottesham Rectory, was fourth with a stand in which a yellow seedling, Mauve Queen, Lord Dundreary, and Hugh Miller, were noticeable. Mr. Hopkins, of Brentford; Mr. Sladden, of Ash; Mr. Perry, of Castle Bromwich, and several others also competed creditably.

In eighteen Fancies (Nurserymen), Mr. Keynes was first, with Baron Alderson, Garibaldi, Patent, Triomphe de Roubaix, Polly Fawcett, Carnation, Pauline, Mrs. Crisp, Reliance, Lady Paxton, Oliver Twist, Mrs. Wickham, Nora Creina, Regularity, Leopard, Harlequin, Queen Mab, and Sam Bartlett. In the stand of Mr. Turner, who was second, were fine blooms of The Flirt, Zebra, Summertime, Stafford's Gem (a very pretty crimson tipped with gold), Garibaldi, Harlequin, and Lady Paxton. Mr. Legge was third; Messrs. Cattell, Garraway, and Perkins also competing.

In the Amateurs' Class of twelve, the Rev. C. Fellowes was first with excellent blooms of Pauline, Lady Paxton, Fancy Queen, Oliver Twist, Harlequin, Queen Mab, Flirt, Summertime, and some seedlings. Mr. Corp was second, Mr. Slade third, and Mr. Perry fourth.

HOLLYHOCKS were not remarkable. Mr. W. Chater received first prize; Acme, Warrior, Princess of Wales, Invincible, George Young, and Rev. Joshua Dix were the best. Messrs. Minchin & Sons, of Hook Norton, were second; Messrs. Paul & Son third.

ASTERS.—Both German quilled, and French varieties were first-rate, Mr. Betteridge taking off the first prizes in both classes. Mr. Wyatt, of Epsom, was second, and Mr. C. Sandford third in each class.

GLADIOLUS.—With this flower a grand display was made by Messrs. Youell and Mr. Standish, of Ascot, who were respectively first and second; but it must have been a difficult matter for the Judges to have decided on their respective merits. Owing to the late heavy rains, however, many of the flowers had suffered somewhat, more especially those shown in the Amateurs' Class. Of Messrs. Youell's collection Madame Vilmorin, Ophir, Princesse Clothilde, Napoleon III., Madame Rabourdin, Mazeppe, and Pliné were fine. Mr. Standish had Etna (a fine red), Impératrice Eugénie, Mrs. Dix, George Stephenson, Brian Boru, Charles Davis (a beautiful scarlet with white markings in the throat), and others of which an account will be found in the report of the Floral Committee. There were also extensive collections from both the above exhibitors, which, though not for competition, were very interesting. Mr. Prince, of Oxford, had third prize. La Quintinye, Reine Victoria, Ambroise Verschaffelt, Le Poussin, Rembrandt, Madame Basseville, and Fanny Rouget were those shown best. Mr. Cattell had also good spikes. Among Amateurs Mr. Sladden, Mr. Perry, and the Rev. H. Dombrain were the successful competitors, ranking in the prize list in the order in which they are named. In their stands were good spikes of Prospero, Calypso, Le Poussin, Sappho, Jeanne d'Arc, Victor Verdier (small, but fine in colour), Endymion, and Bridesmaid.

MISCELLANEOUS.—Verbenas were shown in excellent condition by Messrs. Perkins & Son, and Mr. Perry, of Castle Bromwich, who received first and second prizes; fine large

trusses of Phloxes by Mr. Turner, of Slough; several boxes of Roses in good condition by Messrs. Paul & Son, and some excellent Asters in pots by Messrs. Cutbush. From Messrs. Veitch came the beautiful sweet-scented *Lilium auratum*, the curious scarlet *Anthurium Scherzerianum*, the fine crimson-foliaged *Dracena ferrea variegata*, *Odontoglossum grande*, the large white-flowered *Pancratium zeylanicum*, and other plants, which were submitted to the Floral Committee. Mr. Bull had likewise an extensive group of new and rare plants, among which were *Gesnera Radiancy*, with highly ornamental foliage, some new arborescent *Begonias*, *Adiantum radiatum*, and the beautiful *Marattia elegans*, *Drosera dichotoma*, and several new *Caladiums*. Messrs. A. Henderson had the Cotton-plant in pod; Mr. Salter, variegated plants for ribbon-borders; and Messrs. E. G. Henderson, a selection of Ivies and variegated *Geraniums*; whilst Messrs. Carter & Co. had excellent double *Zinnias*, French *Marigolds*, *Asters*, and *Everlastings*.

The following remarks on the Gladioli and Roses exhibited, are from our valued contributor, "D. Deal:"—

[Notwithstanding the prevalence of disease amongst Gladioli, the stands exhibited were of surpassing excellence, and it was evident that it could not have affected those growers whose magnificent spikes of bloom and luxuriant foliage displayed the very perfection of vigour and growth. The positions of the two great combatants in the Nurserymen's Class were the reverse of that at the Crystal Palace Show, Messrs. Youell being first, and Mr. Standish second. The spikes of bloom exhibited by the former were longer and fuller; but in variety and quality Mr. Standish's were unquestionably the best. He had besides several boxes of blooms, which made a grand display. Amongst the most conspicuous of his flowers were—*Ganymede*, a fine flower in the style of *Poussin*; Mrs. Dix, white, of good substance; Lord Clyde, a large and very fine flower; Etna, glowing red; Charles Davis, beautiful crimson with white feathers; George Stephenson, claret, a novel shade of colour; Princess Alexandra, a very novel flower, creamy buff, crimson feather, almost of the colour of a *Dendrobium*; Randle Jackson, light pink splashed with carmine, deep crimson feather; Boadicea, dark crimson splashed with deeper crimson; Brian Boru, very large, crimson, violet feather; Edith Dombrain, soft salmon, splashed with deeper shade; Demosthenes, fine shape; Euterpe, white, with violet feathers; Roscius, red, with violet lip; Pollux, cream, with dark red blotch; Mr. Marnock, cherry red; Aurelian, very bright crimson; Margaret, fine white; La Belle, beautiful soft pink; Mrs. Peach, peach, with deep crimson markings; and Mrs. Dombrain, a beautiful flower, something like *Impératrice Eugénie*, but better. In Messrs. Youell's were some fine blooms of *Achille*, Madame Vilmorin, Ophir, Oracle, Napoleon III., *Poussin*, Linné, Marie, Pliné, Ophir, and other well-known French kinds admirably bloomed. The same may be said of Mr. Prince's flowers, and of Mr. Cattell's, who had some promising seedlings.

In the Amateurs' Class, Mr. Sladden, of Ash-next-Sandwich, was first with seedlings *Cleopatra*, *Hector*, *Volunteer*, *Prospero*, *Philip Van Artevelde*, *Sappho*, *Lord Clyde*, *Poussin*, *Adonis*, *Fanny Rouget*, *Madame Breol*, *Couranti fulgens*. His stand was very effective and excellently bloomed. Mr. Perry, of Castle Bromwich, was second with *Jeanne d'Arc*, *Sulphureus*, *Calypso*, *Le Poussin*, *Madame de Vetry*, *Mazeppe*, *Raphael*, *Marie*, *Achille*, *Janire*, and *Premier de Montrouge*. The Rev. H. H. Dombrain was third with *Standish's Mrs. R. Hole*, *Earl of Carlisle*, *Mrs. Dombrain* (fine), *Viola*, *Lucifer*, *Mrs. Livingstone*, and *Lemonade*; seedlings *Lord Warden*, *Orange Boven*, and *Bridesmaid*, and *Victor Verdier* and *Endymion*.

Roses were exhibited in goodly number by Mr. Turner, Messrs. Paul & Son, and Mr. Clarke, of Brixton; they were good for the season of the year, and the prizes were awarded as named. *Senateur Vaisse*, *Madame Falcot*, *Maréchal Vaillant*, *Catherine Guillot*, *Victor Verdier*, *Céline Forestier*, *Triomphe d'Angers*, *Souvenir de Leveson Gower*, *Madame Furtado*, *Comtesse de Chabillant*, and other well-known kinds were on most of the stands; but it was surely quite a mistake not to offer prizes at this season for them.]

FRUIT.

The effect of this portion of the Show was much better

than that produced by the floral department, and there was an aspect of order about it, combined with variety, which was very pleasing. Still, as an Exhibition of fruit, it was far from complete, and no exhibition can be considered so where such important articles of the dessert as Pines, Grapes, and Melons are excluded from competition. There is certainly less merit in producing these fine now than at an earlier period of the season; still we think it was a mistake to entirely exclude the above fruits from competition, and to restrict the prizes to out-door fruit only, and that at a time when Apples and Pears are for the most part unripe. Grapes in particular, had they been invited, would have afforded a useful field of observation as regards their comparative earliness and lateness. It would have been desirable, for instance, to have seen whether we could not have really ripe Muscat Grapes in September; for, with the exception of those shown by Mr. Drummond at the Crystal Palace, none have been seen this year at the metropolitan shows exhibiting that beautiful russeted amber colour which is indicative of perfect ripeness. The ripening, too, of the Grapes in the conservatory at Chiswick would also have afforded an excellent opportunity of comparing different varieties, with which view prizes might have been offered for collections of these.

The collections of eight dishes, notwithstanding that good fruit was shown, looked meagre when confined to out-door productions only, and none of them could be considered as furnishing a good dessert. Mr. Turner had first prize for Peaches, Nectarines, Williams' Bon Chrétien Pears, Morello Cherries, Washington Plums, Brown Turkey Figs, and Red Currants. Mr. Henderson, of Trentham, was second, with Téton de Venus and Barrington Peaches, Pitmaston Orange, and Elruge Nectarines, Moorpark Apricots, Brown Turkey Figs, Morello Cherries, and Reine Claude de Bavay Plums. Mr. Kaile was third; and collections also came from Mr. Bousie, gardener to Lord Taunton, Mr. Brush, and Mr. Sandford.

PEACHES.—There were Classes for four dishes, and for single ones, forty-five dishes in all being shown. Grosse Mignonne, Violette Hâtive, Barrington, Bellegarde, and Walburton Admirable, were the chief kinds. In four dishes, Mr. Dawson, gardener to Earl Cowper, was first with Violette Hâtive and Barrington (large and fine), Champion, and Téton de Venus; and Mr. A. Henderson was second with Bellegarde, Madeleine de Courson, Barrington, and Late Admirable. In single dishes, equal first prizes were awarded to Mr. Rust and Mr. Kaile; to the one for Walburton Admirable, to the other for immense fruit of what was stated to be Barrington, but more like the Shanghai. Mr. Dawson was second with good well-coloured fruit of Violette Hâtive; and Mr. S. Snow third with Bellegarde.

NECTARINES. for the most part, consisted of Violette Hâtive, Elruge, and Pitmaston Orange, and were very ordinary in appearance. Mr. Dawson was first in four dishes with Pitmaston Orange, Violette Hâtive, Elruge, and Balgowan; Mr. Henderson second. In single dishes G. Wilson, Esq., Weybridge, had the first prize for the Stanwick grown in pots in an orchard-house; and third prizes were awarded to Mr. Bailey, of Shardloes, for Elruge, and to Mr. Snow for Violette Hâtive.

FIGS.—Only twelve dishes were shown, Brown Turkey being almost the only kind. In three dishes Mr. Bousie had first prize for Brown Turkey, Brunswick, and White Genoa; and in single dishes Mr. Bailey had Brown Turkey (excellent), and Mr. Sayers and Mr. Snow were second and third with the same kind.

CHERRIES.—Only fifteen dishes were shown, and, with the exception of Kentish from Mr. Earley, and Florence, they were all Morellos and generally very fine. Mr. Snow was first; Mr. Turner second; Mr. Budd, gardener to Lord Carnley, third.

PLUMS were both numerous and good. Some very fine Jefferson and Washington were shown, also Victoria, Goliath, Joe's Golden Drop, Green Gage, Kirke's, White Magnum Bonum, Diamond, and some others. In four dishes Mr. Snow was first, Mr. Cox, Redleaf, second, and Mr. Bailey third; and from Mr. Wilson came some excellent fruit from an orchard-house. Mr. Sayer had Pond's Seedling, fine; Mr. Budd, Jefferson and Washington, very good. Extra prizes were awarded to the last-named exhibitor.

single dishes Mr. Snow was first with Jefferson, large and finely ripened; Mr. Knight, Twickenham; second with Joe's Golden Drop; and Mr. Alves, Bromley, third with White Magnum Bonum, very large.

APPLES.—More than a hundred dishes were brought forward. Nearly all were unripe, and therefore could not be said fairly to represent the varieties to which they belonged. There were some well-coloured examples of Fearn's and Cox's Orange Pippins, Kerry Pippin, and Red Quarrenden. We noticed that some of the exhibitors had evidently been polishing up their Apples with the hand or otherwise, the effect of which proceeding was to remove the bloom; and we would recommend to their consideration how their Black Hamburg Grapes would look if subjected to the same process.

In dessert kinds the first prize was awarded to Mr. Bousie for Fearn's, Cox's Orange and Ribston Pippins, all of which were very good; the second to Mr. Mortimore, who had Cox's Orange, Old Nonpareil, and Ribston Pippin. Mr. Wren, of Wallington, was third with Kerry and Ribston Pippins and Nonsuch. Mr. Grover, of Hammersmith, had Kirke's Incomparable beautifully coloured.

Of kitchen Apples large fruit of Reinette du Canada, Alfriston, Hollandbury, Alexander, Dutch Codlin, Dumelow's Seedling, Hawthornden, Yorkshire Greening, and some others were brought for competition. Mr. Snow was first with Alfriston (very large), Golden Noble, and Cumberland; Mr. Anstiss, Chiswick, second with Blenheim Pippin, Hollandbury, and Lord Nelson; Mr. Lane, St. Mary's Cray, was third with Alfriston, Blenheim, and Chancellor (a large showy yellow and red kind). Grenadier and Cox's Orange Pippin from Mr. Bousie; Lord Derby, Lord Suffield, and Royal Russet from other exhibitors, were also large.

PEARS.—Williams' Bon Chrétien, Louise Bonne, Gansel's Bergamot, Chaumontel, and Beurré Bosc were the principal. A first prize was taken by G. Wilson, Esq., with fruit grown in pots in an orchard-house, and which were certainly large and very fine. The varieties were Louise Bonne (the best in the Show), Beurré d'Anjou, and Conseiller de la Cour. First prize was also awarded to Mr. Wren for Marie Louise, Crasanne, and Chaumontel, also remarkably fine. Mr. Beasley, Twyford Abbey, was second with Belle et Bonne, Williams' Bon Chrétien, and Beurré Diel. Some very good fruit of Gansel's Bergamot and Marie Louise were also shown.

MISCELLANEOUS.—A collection of about forty kinds of Grapes from the Society's Chiswick gardens attracted great interest. It contained most of the varieties exhibited in a similar collection at the great October Show last year. There were some fine bunches of Muscat of Alexandria; Golden Hamburg, very fine; Frankenthal; Dutch Hamburg; Raisin de Calabre, which by-the-by, though not first-rate, is excellent for late keeping; Ahbee, very beautiful; De Candolle, and Chasselas Rose de Falloux, also very pretty kinds; Barbarossa; and many others which may be seen growing at Chiswick, where the conservatory hanging with bunches of all kinds and colours is a sight well worth going to see. Messrs. Lane & Son had some Vines in pots bearing splendid bunches for that mode of culture, also good Pears, Cherries, and other fruit in pots. Mr. Henderson had a fine box of Moorpark Apricots, for which he received a first prize; and Mr. Terry, the Hyde, St. Albans, had second for six kinds of Currants, of which Ruby Castle were very fine. Mr. Hall, gardener to Lord Scarborough, sent a Queen Pine of 5½ lbs., but over-ripe. Some good Melons, consisting of Golden Perfection, Egyptian Green-fleshed, Beechwood, and Scarlet Gem were also shown. Melon Apple, an American kind, from G. Wilson, Esq., was of large size and had been grown in a pot; and some very fine Ridge Cucumbers came from Mr. Leslie.

FLOWERING OF THE AMERICAN ALOE.—I have just read an article from the *Oxford Journal* about the American Aloe. I thought long since that English gardeners had given up the idea of the Aloe only blooming once in a hundred years. I saw the Aloe in bloom at New Orleans in the garden attached to the Mint, and ten years before that it had bloomed. I also was in Mexico for two years, from 1845 to 1847, and had the opportunity of seeing many young plants

bloom; by the appearance of the plants I should say they were not more than from four to five years old. I have no doubt but it is quite a century-plant if grown in the way gardeners are used to grow it in England. The Mexicans take from the Aloe a juice, which, when put through a process, makes a strong drink, so strong that an Englishman would not like a second dose. The natives drink it to intoxication.—E. B. PRINCE, *Darlington*.

CHEMISTRY OF SOILS IN RELATION TO GRAPE VINES—SHANKING.

I AM very much interested in the statement made by Mr. Robson in his account of the graperies of Mr. Meredith (*vide* p. 166), where we find it stated that Mr. Meredith's knowledge will enable him to pronounce whether a certain soil will suit the Grape Vine apart from all those outward appearances which are the only guide to a less practised hand. Until I read this statement it had been my impression that, notwithstanding the present advanced state of chemical science, it was not in the power of any man by a chemical knowledge of soils, combined with a practical knowledge of horticulture, through analysis to determine the due proportion of ingredients requisite to furnish proper aliment, both in quantity and quality, to the roots of any plant—in other words, to be able to take a handful of soil and by analysis to say there is so much of one component in excess or so much of another deficient. Yet it has been my idea ever since I have been able to think for myself that the horticulturist must be continually at fault until chemical knowledge can be thus applied. It is beyond the power of any one by mere inspection to determine without risk of mistake the adaptation or otherwise of a given soil for a given plant: hence the failures which so frequently result from following rules which are in fact incomplete, although they have been proved by a practical man, in his experience, to be sound and good.

My meaning may be made clear by example: A recommends for the culture of a particular fruit a particular kind of loam, say turfy, having been six months cut from a pasture, moderately sandy, and also moderately rich. Well, any gardener has a pretty clear idea of the meaning of these terms, and if a dozen intelligent horticulturists were required to furnish a wheelbarrow-load each for comparison by ordinary inspection, the samples would not be found to differ very materially. Now, if the bulk from which these samples were taken was used in a like proportion, all other points at the same time being equal—say in the composition for a Vine-border—we should expect to see like results; but I affirm that although by mere chance the results may be nearly alike, the probability is that they would vary very much in the different cases.

I should like to have a word upon that perplexing matter, the shanking of Grapes, not by way of attempting to elucidate the mystery which so many cleverer heads than mine have failed to clear up, but rather to elicit opinion, for the more I have studied and observed hitherto the more inexplicable has the matter become. I will, therefore, if you will allow me, for the sake of calling forth opinion and advice, state some of the observations I have made.

In the place where I served my apprenticeship we had a vinery filled entirely with Hamburgs. Throughout the whole of this house during my first three years, and likewise for some years before I saw them, they shanked more or less every season. It became desirable to divide this house into two compartments, one of which was subsequently started about January 1st in order to cut from it about the first week in June. The other division was made to ripen its fruit about two or three months later. Now, for the four or five years over which my observations extended, after the division was made, there never appeared, so far as my remembrance serves me, a shanked berry in the earlier forced end, whilst in the later division three-fourths of the bunches were spoilt, as to form and size, through the berries shanking. I must state here that the conditions under which the Vines grew were in no way altered at the time of the division of the house, only that one end was forced and the other not at all, or but very little. The whole of the border was covered with about 9 inches of stable-dung

during winter, as there were no means of bottom heat provided.

In two succeeding situations it fell to my lot to have the care of several vineries both early and late, the borders of some of them underlaid with hot-water pipes, others having none; but in neither of these places do I remember at any time the berries shanking so as to injure the appearance of a bunch of Grapes.

At the place where I am at present I found, five years ago, a late house filled with comparatively young Vines, and here again the Grapes had the old complaint, but not so as to materially injure the crop. Each year since the mischief increased, until in 1862 we had not a good bunch of Grapes in the house, after which I succeeded in persuading my employer to allow me to lift the Vines and make the border entirely anew. This we did in December, when I found the border very compact, being composed of a rich loam which had apparently received a large admixture of rotten dung, there being no grit or rubble in the mass. Large roots were in abundance, but the formation of fibres seemed gradually to have ceased, for scarcely one such calculated to feed a plant could be found.

I, of course, thought the cause of complaint evident enough, and the remedy, therefore, easy and sure; so, after having gathered all the information I could from writers on the Grape Vine, I decided to follow Mr. Thomson's directions, only not using any stable manure in the compost. Good turfy loam from a pasture had been provided, mortar rubbish, half-inch bone, and charcoal in the prescribed proportions being well intermixed with it. The Vines were planted in mild damp weather, their roots being spread regularly over the border and covered to the depth of 6 inches. The border was made 2½ feet deep and covered at once with long stable-dung to protect it from the weather. Furthermore, the drainage and aspect are thoroughly good. The Vines broke in March, strongly but rather more slowly than usual; but after a while they, of course, showed the effects of removal. They renewed their growth healthily but not vigorously after the sun had warmed the border to the temperature of 58° or 60° at 1 foot deep. This was towards the end of May. Most of them carried a few bunches of Grapes, which I allowed to remain. On their beginning to colour in August shanking took place as bad as before. This I at first thought might be attributed to the natural inability of the Vines to ripen fruit whilst their energies were so taxed for the formation of young wood. On examining the border I find that the young roots have permeated the whole mass at least to the depth of 12 or 15 inches, but that they are all in a state of decay! The temperature of the border has remained throughout the summer about 6° higher at 1 foot deep than the temperature of the earth as registered at Chiswick. The roots have never at any time been allowed to become dry, although they have not received much watering, as I prefer in hot weather covering slightly to prevent evaporation. As this vinery is in two compartments I intend, all being well, to force the one division rather early next season, in order to see if the result will be the same as it was in the case of the first house of Grapes which I ever had to do with. If any of your correspondents can throw light upon this matter they will greatly oblige.—EPSILON.

LIFTING AND PRESERVING GERANIUMS THROUGH THE WINTER.

"AGNES" says—"I am promised by a friend some of this year's plants of variegated Geraniums—Bijou, Alma, Flower of the Day, &c., also, Golden Chain and Christine, but cannot receive them till the season is nearly over. What is the best method for preserving them during the winter? Should roots or heads be pruned-in or left? Should the pots be large or small? I should like them to look well in the greenhouse during spring and winter if I could, and to be bedded-out in the summer. Does Mr. Thomson mean, in No. 123, that the Geraniums are to be left in the eight-inch pots till bedded-out? and what does he allude to when he says they will be managed the same as detailed in the case of the variegated sorts?"

[When you receive the Geraniums let them be stripped of

all the leaves that choke up the centres of the plants, leaving only those which are fresh and healthy-looking about the points of the shoots. If allowed to remain in the bed till the usual time of lifting such plants, the majority of the leaves of the variegated sorts named will have assumed a somewhat sickly appearance, and these, and all that would be likely to droop and decay about the plants, should be removed at once before beginning to pot. It is not advisable to cut or prune back the stems, because they are apt to die back and cause decay at the main stem of the plants. When we want to prune such plants they are allowed to make roots, and show indications of active life first, and this is not generally the case till after the turn of the year. They may then be cut back, if dwarf plants be the object, and they will soon break at the eyes left, and the tops may be made into cuttings, which strike freely in heat in February. They may either be put singly into five and six-inch pots according to the size of the plants, or several plants may be put into larger pots. The roots should not be pruned beyond cutting back any strong, straggling ones. The soil with which to pot them should be of equal parts loam and well decayed leaf mould, with about a sixth part of sand, all well mixed together and passed through a three-quarter meshed sieve. Drain the pots well, and in potting see that the roots are well distributed amongst the soil, not bunched into the pot and some soil pressed on the top of them as we have often seen. The soil should be pressed firmly about the roots. When potted give the plants a watering through a fine rose sufficient to wet the whole soil, and place them in a light airy part of your greenhouse. The system of crowding them together in any close frame or house, and keeping them close and shaded, should be avoided as much as possible: it is attended with damping and decaying, and is entirely opposed to the nature and constitution of Geraniums. Through the winter they should just have water enough to keep them from shrivelling, and very little indeed will be sufficient for this. It is a good plan to cover the surface of the pot with dry material, such as charred refuse or very dry fine mould, immediately they are watered at potting time. This prevents evaporation and the necessity for frequent watering, which is undesirable. All damp leaves and shoots should be removed, as soon as they appear, throughout the winter.

If you can introduce them into a gentle heat about the middle of February, they will soon grow and make nice bushy plants that will look well in the greenhouse for a while before planting-out time. But unless potted early, and put into a house with fire heat for a while in autumn, you must not expect them to look very well in your greenhouse in winter, the variegated sorts in particular. But Christine being a very hardy Geranium will sooner recover the shock, and by careful lifting and a slight degree of fire heat after being potted will soon look fresh and nice.

The Geranium cuttings are not left in eight-inch pots till bedded-out, but are potted singly in three and four-inch pots, according to the size of the young plants. This is done in February, and when a little heat can be afforded them after potting, they will the sooner make fine plants, but they are left no longer in heat than just to give them a start. It was simply the "autumn propagation" and winter management that were treated of in the article you refer to, and after they are rooted the common Scarlets are treated the same as the variegated sorts. They are all potted-off into single pots in spring, although I have frequently planted them from the pots they were rooted in; but this course has never been followed except from necessity, either for want of room or pots—disadvantages which I am not called to cope with now. Geraniums will do very well shaken out of the cutting-pots and planted in the beds in the end of May, but they never bloom so freely as nice rustling plants that have been a month or two in single pots, and not crowded together, and shaken-out plants are much later in making a display of bloom.—D. T.]

Mushrooms.—I do not think any one need despair of ultimately obtaining Mushrooms because his bed does not bear in the customary six or eight weeks; for I made up two beds in June last January, and they never produced Mushrooms. When great cucumbers in leam and yucca

nut refuse on the beds, and last week the beds, to my astonishment, began to produce Mushrooms among the Cucumbers.—LEX.

THE GLADIOLUS AND ITS DISEASE.

I know of a certain Horticultural Society, whose members, not contented with dry formal committee meetings, used to have occasionally a more social gathering; and it is said that whenever there was a flagging in the conversation some one would begin to talk about this flower, and immediately controversy sharp and strong would spring up as to the proper quantity of its syllables. I do not believe to this day that it is settled—indeed I know but very lately it was proposed to refer it to Dr. Todd, one of the Fellows of Trinity College. Whether THE JOURNAL OF HORTICULTURE will be more successful with its readers I do not know; but I hope its Editors will forgive me if I call in question their *ex cathedra* dictum on the point, for of the three methods of pronunciation that which they have fathered seems to me the most untenable. Gladiolus is unquestionably a diminutive form of *gladius*, a sword, and as a rule all derivatives are short—e. g., *fides* makes *fidicula*; *nutrix*, *nutricula*; and, more to the point, *filius*, a son, makes *filiolus*. Then, again, one vowel before another is short, so that Gladiolus would be even more correct; but I think all analogy is in favour of the pronunciation being Gladiolus. As to the first syllable, that, too, should be pronounced, I fancy, shortly—gläd, not gläde; but I do hope the Editors will withdraw their sanction to such a barbarism as Glädilus.

As to the more serious matter of the disease which has manifested itself in the bulb in various places, I wish I could give positive information or suggest a certain remedy. My own experience on the point is, I am happy to say, "nil;" for my small collection of some two or three hundred bulbs is almost, if not altogether, free from it. The question seems to me much in the same condition as the Potato disease, to which it bears a striking similarity, when everything from electricity down to Smee's *Aphis vastator* was considered to be the cause of it. Let us look at the data which we have—

1. This is not the first season of its appearance. Some collections suffered largely last year; so that we must not, I think, in seeking for causes lay too much stress on the exceptional character of the present season.

2. It is prevalent on the continent as well as in England, though I do not know whether to the same extent: therefore our climate must not be charged with it, as is too often the case.

3. It seems to be more prevalent on heavy than on light soils. Mr. Standish is free from it in the light peaty soil of Ascot; and so is Mr. Youell, whose soil approaches closely, I believe, to that of Holland. In my own light, friable, but rich soil I have hardly seen a trace of it, while from heavy lands and on the London clay it seems to be very severe.*

4. The plan of leaving the roots in the ground advocated by some, and suggested by your correspondent "R. T. E., Shrewsbury," as a probable remedy, does not seem to answer, as your correspondent "T. H. C., Walsall," says that it was only those left in the ground that exhibited this tendency.

5. Potting the bulbs and then planting them out is no protection against it, as my friend Mr. Andrew Henderson told me that that was the system adopted by his firm this year, and that their beds had totally failed.

Such are a few of the facts which have been brought forward, and although by no means sufficient to form an accurate judgment from, they are enough to make a probable one; but as this flower is now become so much in vogue, and is so great an addition to our autumn flowers, it would be most desirable that those growers of it who are readers of THE JOURNAL OF HORTICULTURE should send in a statement of their own experience, where they obtained their bulbs from, the nature of the soil, situation, mode of treatment, and results. I happened to meet my friend, M. Charles Verdier, at the Crystal Palace Autumn Show the other day (where the paucity of exhibitors in this flower told the tale

* I know this is contrary to "H.'s" experience in the "Florist and Pomologist" for 1862—"it gives no assistance, and it is not so in the same year."

of disease), and had with him some little conversation on the point. His opinion (which rather coincides with my own notions and is opposed to that of Mr. Standish), is that it is the result of the excessive moisture of last summer, and, indeed, I may say of the last two years—at least the autumn of 1861, when bulbs were maturing, was so; and that hence the bulbs were not sufficiently dried-off. I am the more confirmed in this from my own slight experience. My stock consisted of a quantity of my own harvesting, some that my friend Mr. Standish was good enough to send me, a few of the new sorts obtained from MM. Thibaut and Keteleer of Paris, and a few from Messrs. Barr & Sugden, also French roots. In only the two latter, and that in not more than five or six instances, have I had failures; and even they were not in the manner described by your correspondents, but simply the rotting-away of the roots.

My own plan of drying is very rigid, and I know Mr. Standish is equally particular, although, from having an immense stock and larger means of harvesting at his disposal, he adopts more effective plans. But I watch carefully the beds; and as some sorts are earlier than others, I take them up as they ripen-off, and put them into a small flower-pot with their label, and bring them into the house. In the back kitchen there is a copper close to a patent kitchener, where there is considerable heat, and here I place them. They remain for a couple of weeks until they are quite dry, when I put them into paper bags and lay them by. That they will bear some considerable drying-off I have proved, for a small box of mixtures was forgotten for some weeks, and when taken out I did not think they were good for much. I, however, planted them out in an out-of-the-way place under the shade of trees, and there they have grown and bloomed most vigorously. I have not watered this summer—at least one of my beds, and that the most vigorous, has not had a drop, so that I do not think M. Loise's notion is likely to be correct; however, as I have said, we hardly have data enough to go upon as yet.

Those of your correspondents who fancy that the bulb formed will be all right, will be, I fear, mistaken; but at the same time I would not have growers discouraged. It would seem almost hopeless at present to grow them on heavy soils, unless very materially lightened by a good admixture of leaf mould and sand; but I should say that in all light or lightish soils they may be again attempted.

The disease seems in some way to be connected with climatic influences, and results, probably from exceptional causes. These may be removed, and the bulb itself acquire more hardiness. Hollyhock-growers will remember, as I was reminded by Mr. Laing, that some years ago the same thing took place in that plant. Collections were cut up, and the attempt to grow the flowers pronounced hopeless. It, however, after some years of much heart-burning to growers, wore itself out, and the plant is now seldom attacked with it. So with the *Gladiolus*, I believe. We may hope to see it tide over its present difficulties; and no one, I think, who has seen a collection of them as cut blooms but will desire to see them extensively grown. As ornamental plants for gardens I question if they will ever be very effective, but as cut flowers they have few rivals. They bloom so well in water, daily expanding their flowers, and are so vivid and varied in their colour, that they must be great favourites.

My ideas on their cultivation would be, Dry the roots well, keep them in a cool place to prevent their growing too early, manure highly in the autumn, and again give a slight coating in spring, and do not plant too early.—D., Deal.

STRAY NOTES ON RED BEET.

HAPPENING lately to be in a nobleman's garden in the north of England, in passing along the kitchen garden a plot of Red Beet attracted the attention of my friends, and it was determined by the head gardener, a shrewd, well-informed member of his profession, to examine a root of each of the three kinds there grown. One of the varieties presented a rather coarse-looking leaf, much veined with green; another was somewhat like it, but with less top; while the third would have been a great acquisition to the flower garden, its foliage being small and firmly set on, and of the

most beautiful rich crimson that could be wished for, each leaf shining in the sun; and many would have pronounced this at first sight to have the best-coloured root. But on examination it was found not to be so. The best one of the three kinds grown was the one with the large coarse-looking top, thereby affording another illustration of the proverb, that we are not to be led away by outward appearance only, and as this is not the first time I have observed the same thing in Red Beet, I thought it would be well to record it. Red Beet of good quality has always been an article anxiously looked for, and as the best kind is apt to degenerate, new varieties, or rather the maintaining of a good quality in its colour and character is an important affair, as, like most other objects of merit, seed from the very best is much less plentifully produced than from a common sort. Soil and situation have also some influence on its colour, not that a really good variety would come bad on an unsuitable soil, but simply it would be a shade less beautiful than the same on a soil better adapted to it. The dark sandy soils bordering some rivers produce the best Beet that I have seen, while on the other hand the best varieties degenerate in two or three years if confined to a chalky district, and, consequently, require to be renewed by importation of seed from a more favoured locality. Beet, therefore, like everything else, requires renewing; and although it may, under favourable circumstances, have reproduced itself in good condition for a great number of years, such success is chiefly due to the care evinced in removing all defective roots, and each year cultivating it on fresh ground. But the question has yet to be asked, Are not a great number of the roots reared yearly from seed saved on the same spot deficient in some point necessary to entitle them to be regarded good, which might not be the case if a change or cross took place?

It is needless here entering into the details of culture which have been given elsewhere, but I may state that a too rich soil is by no means wanted for Beet, as the amount of watery juice it there imbibes drains away after the root is cooked and sliced, and the root assumes a withered appearance. As my object was more particularly to direct attention to the deceptive character of the foliage as indicative of what the roots are, I must leave to other hands the task of explaining the necessary points in the cultivation of this vegetable.—H. T.

PROPAGATING CLOTH OF GOLD PELARGONIUM.

IN answer to an inquirer signing himself "NORTH BRITON" in No. 126, I am afraid that by the time this is in print it will be too late to do much in propagating the Cloth of Gold Pelargonium from leaves. Succeed he may to a certain extent, but he will perceive presently that the season is too far advanced to carry out the principles on which this mode of propagating is best conducted. But I hope that "NORTH BRITON" and others who may read this will remember that I am only an amateur, and that, while I describe my own process, others may be able to give a far better; and no doubt experienced propagators at nurseries would laugh at a poor parson daring to leave his pulpit to occupy their bench and lecture on propagating Pelargoniums. But as I believe numbers of your readers are, like myself, amateurs, who would be glad to give others the benefit of their own limited experience, or any discoveries they may make; and as I also know it to be a fact that many first-rate professionals in gardening are unacquainted with a very simple but rapid mode of propagating Pelargoniums, I venture, very humbly, to lay my own little secret before them.

In order to convince you, ladies and gentlemen, that my process is a really good one, I beg to inform you that when Pelargonium Christine first came out a small spring-struck cutting, with only some four or five leaves on it, was given me in a certain month of May, and, believe me, the May following was a very merry one to me whenever I looked at the children, grandchildren, and great-grandchildren of my spring-struck mother Christine; for there they were, eighty of them, as blooming, hearty, and strong as if I had gone to Messrs. Henderson or Kinghorn and paid 24s. per dozen for them, which was about their price that season.

With reference to Pelargoniums, the phrase, "Propagating

by leaves" is not suitable. Begonias, Cacti, and several other succulent-leaved plants may be said strictly to propagate by leaves, but not Pelargoniums. Together with the leaf you must have a joint, and at the union of the leaf to the joints there must be a bud visible. Pelargoniums, therefore, may strictly be said to propagate from eyes or from single joints, and yet it is not every joint that will make a plant. For instance: those joints which have a leaf on one side and a flower-stalk on the other, though they may succeed in rooting, will seldom grow into a plant. But take a good strong cutting of your Cloth of Gold Pelargonium—say it is 4 or 5 inches long, with four well-developed leaves growing on opposite sides at each alternate joint, besides two top joints, the lowest with the bud just bursting into leaf, and the topmost with two or three young leaves on it. These two last had better be put aside till you have two or three more of a similar growth to pot with them. Take now your four lower leaf-joints, cut them in the usual way about the eighth of an inch below and rather more above each joint, and you have four leaf-joints with buds in the axil of the stalks, besides the two top ones—six in all. Have a pot ready with plenty of drainage, and filled to within half an inch of the rim with soil made up of light loam and leaf mould, and a good quarter share of silver sand in it. Press the soil firm, and add a little more if after pressing the surface is more than half an inch from the rim. Prepare now four little sticks about 9 inches long, take one and push it firmly into the soil. Close to the stick make a small hole half an inch deep, and in the hole just press one of your joint-cuttings so that the leaf stands at right angles to the rim of the pot; tie the leaf to the stick. Proceed in the same way with the three other joint-cuttings, and you have a pot with four masts and four lug sails set to catch every breeze and ray of sun to convey the cargo below on to the next potting season. Give the pot a shake, and sprinkle over the surface of the soil about the eighth of an inch of silver sand. The two little top joints may be treated in much the same way when you have others of a similar growth sufficient to fill a pot. Your cuttings so prepared will require to be dewed only with a syringe, and shaded from hot sun for three or four days. After that the hotter the sun the better, being careful only to give a syringing three or four times in the course of the day; keep, however, from drenching rain. In three or four weeks the buds will be pushing out tiny leaves; and if you began propagating in July, by September each bud will be a plant from which you may take some half dozen more leaf-cuttings.

There is, however, a mode of preparing the mother plants from which to propagate, by a system of alternate forcing and hardening, which I shall be happy to lay before your readers on a future occasion. The season is now too late for it. It is not too late, however, for leaf-cuttings, and I shall probably be making some hundreds this week; but when they have formed a callus I shall give them a little bottom heat to start them and strengthen them for the winter, in hopes of getting more stuff off them in the spring.

I am sorry that my absence from home prevented me from sending you this before; but "NORTH BRITON" can try his hand, nevertheless, if he begins at once.

What a magnificent season this has been for crossing Pelargoniums! I hear there are lots and lots of fine things coming out next year; but what wonders shall we see the season after! By-the-by, these names "Pelargonium" and "Geranium" are a great nuisance. I know "Pelargonium" is right botanically; but it is not possible to come to some general understanding that "Geranium" means all the bedding classes, while "Pelargonium" means the exhibition varieties, blotched, spotted, and foreign and fancy? Let the heads of the trade meet before their next catalogues are out, and give the public some decided signification to the two words "Pelargonium" and "Geranium."—F. W. ADEY, *The Cell, Dunstable*.

EXTRAORDINARY BROCCOLI.—A specimen of the "Southampton Broccoli," grown in the parish of Mortimer in this county, was recently exhibited for a week in the window of Messrs. Sutton & Sons, of Reading. The weight in cooking order was 17 lbs. 6 ozs., and the measure round 4 feet 1 inch. I saw it at the Horticultural Society's

WELL HEAD GARDENS, HALIFAX, YORKSHIRE.

(Continued from page 194.)

THE next house is a stove, 62 feet by 18, with a centre bed, under which run several hot-water pipes, and there is a shelf all round on a level with the glass. At one end of the pit a tank containing aquatics is charming. The Sacred Bean (*Nelumbium splendens*), was in flower, and *Nymphaea Devoniana*, *dentata*, and *corulea* occupied the remainder of the tank. Of plants *Lasiandra Fontainesiana*, 6 feet high by 3, *Ixora coccinea superba*, 4 feet by 3, and *I. javanica*, *alba*, &c.; *Clerodendron fallax* and *C. Thomsoni*, *Centradenia grandifolia* (very fine), and the curious *Aristolochia triloba*. All the varieties of this genus are grotesque enough for anything, and form fitting companions to *Nepenthes*, or Pitcher-plants. *Aristolochia ornithocephala* is the most singular plant I ever saw. It has the head of a hawk and the beak of a heron, with the wattles of the Spanish fowl, which, however, are grey netted with brown; the head the same colour veined, whilst the beak is grey—the gorgeous flowers of *Echmea fulgens* contrast well with the foliage, thereby fitting it for a good place on the dinner table. *Musa Cavendishii* is well cultivated. Fruit weighing 42 lbs. was lately cut, a notice of which appeared in this Journal, but it was stated to have been weighed with 14 ozs. to the pound instead of 16 ozs. However, there is no such local weight as 14 ozs. to the pound, though there is 16 lbs. to the stone; therefore the weight of the fruit was 42 lbs. avoirdupois. Here are also large specimens of *Allamanda Schottii*, *grandiflora*, and scores of fine-foliaged and variegated plants, as *Croton variegatum* and *pictum*, 4 feet by 5, *Dieffenbachia maculata*, *Dracenas*, *Pavetta borbonica*, *Colocasia macrorhiza variegata*, *Pandanus javanicus foliis variegatis*, 8 feet through, &c.

Descending by a few steps we enter, from the stove, the show-house, 30 feet by 18, now gay with *Petunias*, *Fuchsias*, and *Geraniums*. Here I fell in with that good old free-flowering plant, *Campylia elegans*, a plant of which, 3 feet across, is no despicable object. Plants of the old tuberous *Geraniaceae* are as curious as *Orchids*, but no one seems to care about them. At one end of the house was a fine specimen *Cyathia australis*, whilst the other was ornamented by a magnificent specimen of *Dicksonia antarctica*, *Cattleya Lemoniana* in flower, and in baskets suspended from the roof were *Stanhopea insignis* and *oculata*, both in flower.

Proceeding a couple of yards further on we enter the *Orchid-house*, 30 feet by 20, heated by hot-water pipes in iron troughs. These troughs, which can be filled with water when moisture is wanted, are about 2 feet wide and 10 inches or 1 foot deep, and at the bottom a couple of four-inch pipes are placed, of course longitudinally. Now, by this system—which, in my humble opinion, is superior to all others—the atmosphere of the house can be made moist, even saturated, without syringing much, or dry as circumstances require. Its other advantages are, the amount of evaporating surface is large, therefore the plants imbibe the moisture at a temperature never exceeding that of the house; and that there is none of the stew-pan tendency of hot-water gutters fixed on hot-water pipes, for the troughs are on the floor under the shelves, so that the heat and moisture must be thoroughly diffused through the house before it reaches the plants. In short, the troughs give the genial and beneficial effects of a tank without any of its drawbacks, as moisture in winter when it is not wanted.

The *Orchid-house* is divided by a partition of glass, and is a double span. Amongst a choice but not large collection I noticed good plants of *Anætochilus Lobbi*, *Lowi*, *setaceus*, *argenteus pictus*, *striatus*, and *xanthophyllus*, growing in fibry peat, sphagnum, and silver sand. The surface of the pot being covered with the last, the compost is kept moist. A bell-glass encloses the plants, and is tilted a little on one side, for these gems above all other plants detest a stagnant atmosphere, though it must be close, water on the leaves, and a sour soil. Of plants in bloom were *Calanthe maruca*, *vestita rubra* (crimson eye), *vestita aurea* (yellow eye); *Peristeria elata*; *Miltonia candida*, *Clowesiana*, and *spectabilis*; *Oncidium sphacelatum* and *papilio major*, and *Trichopilia suavis*. Out of flower, but not less interesting, were *Phajenopsis Schilleriana* with fine leaves, *amabilis*, and

grandiflora; *Vandas insignis*, tricolor, Roxburghi, and *conruea*; *Erides crispum*, odoratum majus, quinquevulnerum, virens, major, and *Warneri*; *Oncidium lanceanum*, pulchellum, &c.; *Saccolabium Blumei*, and very many more varieties of these now-popular plants.

In the other division I noticed the shelves or tables were covered with sea gravel about the size of a horse bean, which does not choke the drain-holes of a pot like sand, and it imparts a clean aspect to the whole. Here were two examples of that very odd-looking plant, *Alocasia metallica*, with more than a score of leaves on each, forming, with *Musa vittata*, the best set-off for a dinner table that I can imagine. Put the *Musa* in the centre and relieve it with *Adiantum* around it, and set the *Alocasias* one at each end of the table, and they will cause a sensation. The *Alocasia*, though a slow grower at the best, grows here like a Colts-foot, and sends up suckers like Willows. The *Musa* in question is the noblest-looking plant I have yet seen. It has the habit of *M. Cavendishii*, but with a somewhat longer and narrower leaf, having stripes of silvery whiteness cross-wise on the upper surface of the leaf. The plant here is 6 feet high with six leaves about a yard long. Here, too, is a plant for the curious, the Lattice-plant from the pools of Madagascar, growing in the water of an inverted bell-glass, and *Sarracenia purpurea*, var. *lanceolata*, rubra, and *Drummondii*, flourishing in sphagnum, fibry peat, and cocoa dust. How happens it that these hardy plants require a high temperature? Not less interesting for the beauty of their foliage were *Pandanus elegantissimus*, with red-edged leaves, charming for dinner-table decoration; *Campylobotrys refulgens*, with bronzy red-coloured leaves, having a satiny lustre; *Saccharum violaceum* (Violet Sugar-cane), with the habit of a grass, having rosy-violet stems and young spray of the same colour drooping gracefully when mature, and excellent for the dinner table; *Cyperus alternifolius variegatus*, which requires a poor soil, and is sure to come in character if grown in pure sand only—green or variegated, no plant excels this for ornamental purposes—nice plants of *Gomphia theophrasta*, rightly named, as it much resembles a *Theophrasta*; *Eriocnema marmorata*, with a smooth *Gloxinia* leaf beautifully dotted with silver; *Quassia amara* (Bitter Quassia); *Maranta vittata*; *micans*, a pretty-leaved kind with a red midrib, &c.; *Caladium regale* and others, not excepting *C. Lowii*; and *Cissus porphyrophyllus*, just contrary to *C. discolor*, which loses the beauty of its leaves in proportion to their age; but this gains in colour with age; the leaves have more substance, and are round instead of ovate. I may add *Sphærogyne latifolia*; *Hibiscus Cooperi*; *Phyllagathis rotundifolia*; *Cypripedium villosum*, *Lowii*, *Hookeri*, and *hirsutissimum*, and many more new and rare plants too numerous to mention. I must not omit noticing a pan of seedling *Alocasias* just peeping from beneath the soil. There were about a dozen of them, but what they will be when developed is another question. The seeds were a cross between *Alocasia metallica* and *Caladium marmoratum*, the former being the female parent or seed-producer.—G. A.

(To be continued.)

NOTES ON THE BEDDING-OUT AT THE CRYSTAL PALACE, BY AN AMATEUR.

MR. ADEY has already given your readers the benefit of his opinions on the bedding-out at the Crystal Palace, but, perhaps, you will not object to insert a few further notes on the same subject by an amateur.

Like Mr. Adey, I took my first look at the garden from the doorway directly facing the Rose Mount, and the first thought which entered my mind was, "Oh! how different to last year!" accompanied by a feeling of disappointment, which, perhaps, prejudiced me throughout my visit. However, I took out my note-book and proceeded to take down the planting of the festoon-bed round the Rose Mount and the beds inside, and then hurried off to examine the beds round it on the outside. Here my feeling of disappointment was increased; for where I last year spent a long time taking notes, this year I scarcely found a single bed which attracted me or invited inspection.

One bed, which was planted with a light pink *Verbena*

edged with a white *Verbena*, was very tame from the entire absence of contrast or shading. Another, the arrangement of which consisted of alternate circles of *Cerastium* and *Gazania splendens*, seemed to depend for effect more on the contrast of the foliage than anything else, and the blossom of the *Gazania* rather spoilt it than otherwise.

There was a something which offended the eye when this part of the garden was viewed from the Rose Mount, but what it was I did not discover until I had seen the effect of the garden on the terrace from the Palace.

Judging from my experience of last year, I still felt sure that I had a treat in store in the chain-border. But, alas! here again I was doomed to disappointment. That which last year was the most beautiful and effective thing in the way of planting that I have seen, was this year not a chain at all, properly so called. Whatever can have induced the designer of those beds to sever all the links of the chain by connecting them with *Lobelia Paxtoniana*, instead of making the chain continuous as it was last year, by carrying the edging of *Alyssum* all round, and thereby entitling it to be called "chain"? This struck me as being the greatest mistake made in the planting in the whole garden; for not only is the beautiful effect of the continuous chain, over which last year the eye never ceased to wander with delight, completely broken, but two lines, one of white and the other of blue, running at right angles to each other, are by no means calculated to contrast well.

When I had mounted to the Palace and viewed the terrace-beds from that commanding position, I discovered what it was that had offended my eye from the Rose Mount. That which struck me as being the great difference between the planting this year and last, is, that last year the prevailing idea seemed to be *contrast*, whereas this year it appears to be *shading*. In consequence of the plan pursued in carrying out this latter idea, the eye is attracted by large and almost unvarying masses of scarlet shaded with pink, almost unrelieved, and the effect is very wearying to the eye. This it was which struck me in some of the beds near the Rose Mount, and much more strongly in the grand view of the terrace garden from the Palace.

The beds which interested me most, and the effect of which I was most careful to observe, were those in which appeared *Amaranthus melancholicus ruber*, *Coleus Verschaffelti*, *Centaurea candidissima*, and *Centaurea gymnocarpa*, the first and two last of which I do not remember to have seen before.

I was some little time making up my mind which had the best effect from a distance: *Centaurea gymnocarpa* edged with *Coleus Verschaffelti*, or *Amaranthus melancholicus ruber* edged with *Centaurea candidissima*; but I finally decided in favour of the latter, the *Amaranthus* having very much the effect of an extremely handsome blossom. There were other plants in the same beds, but those which were not hidden by the plants I have named by no means contributed to improve the effect. The unpleasant impression left on my mind by the rest of the garden was quite effaced by an inspection of these "coming favourites," though it is said that the *Coleus* is to be abolished as a bedding-out plant.

I cannot conclude without expressing my opinion that there is one great improvement which might be made, and which would be of great assistance to those who, like myself, go to the Crystal Palace to take notes of the bedding-out, in order to assist their friends in making their plans for laying-out their gardens the following year—it is to give the names of the plants used. It cannot be expected that an amateur who spends most of his time in working at a profession can know the names of all the different *Geraniums*, *Calceolarias*, &c., which are used in the bedding-out at the Crystal Palace and other large public gardens, and at the same time it is of little use for him to note down "Scarlet *Geranium*," or "yellow *Calceolaria*," when the former may be "*Crystal Palace Scarlet*," "*Cottage Maid*," or "one of Mr. Benton's new *Geraniums*," and the latter may be "*Aurea floribunda*," or "*Gaines Yellow*." Surely it would not cause much extra trouble if small tallies were placed in each bed showing the names of the sorts used. They need not be too conspicuous, and they would be a great convenience, and would add much to the very great interest which all who care to have their gardens

gay and planted according to the fashion must take in the system of bedding-out pursued at the Crystal Palace and other places which professedly set the fashion. A single mistake made in taking down the name of a plant may spoil a whole garden next year.—W. H. B.

ALOCASIA METALLICA.

This ranks among the most distinct and peculiar, as well as the most beautiful of the fine-foliaged plants which have been introduced from Borneo of late years. It strikes the eye at first sight as one of the most curious-looking objects of the vegetable kingdom, and those who have not seen it can scarcely form a correct impression of its polished bronzy appearance. Its leaves have all the solid and lustrous look which belongs to a shield of polished bronze; and their ovate-oblong, peltate shape presents an outline somewhat like a tortoise's back. Their stalks being short and stiff, the outline of the plant is compact and massive. Few subjects are more conspicuous in a collection of ornamental-foliaged plants, and where only a dozen kinds are grown it ought to be one of the number, more particularly as it is evergreen, retaining its leaves in beauty all winter, and is, moreover, a plant very easy of cultivation. Any person who can command a high moist stove temperature can have few difficulties to overcome in the culture of *A. metallica*. These remarks are intended for any readers who have not yet seen this plant, while the following brief directions as to its culture are at the request of a correspondent.

Very turfy peat and loam, broken up with the hand and mixed in equal proportions, with the addition of about a sixth part of the whole of well-rotted leaf mould, and a sprinkling of silver sand and charcoal broken up fine, is a compost that suits this *Alocasia* well. Supposing that you have a healthy young plant well established in a six-inch pot and in need of a shift, it may safely be transferred into a nine-inch pot. The drainage should be carefully secured, and the crocks thinly covered with a layer of the most fibry part of the soil. The operation of shifting need not have anything peculiar about it different from any other free-growing plant. In placing the fresh soil round the ball be careful to preserve the strong fleshy roots, and keep the bulbous-looking base of the plant rather high than otherwise. As already mentioned, it requires a high stove temperature to grow it freely, and a moist atmosphere is indispensable to a healthy development of the foliage. It should be placed near the glass, and carefully shaded from the direct rays of the sun for the greater part of the day from the 1st of April till the middle of October. To grow it with all the compactness and strength which it is capable of acquiring it should have plenty of room, and be kept quite close to the glass. When crowded among other plants, and far from the glass, it becomes drawn, and loses that massive and imposing appearance peculiar to it when well grown. With a high temperature—say 75° at night—and potted in open well-drained soil, it delights in a good supply of water, and under these conditions will in one season form a large handsome plant—an object well worthy of any extra care and trouble which may be bestowed upon it.

I recently had the pleasure of visiting the garden of an amateur who does all his own gardening so far as the care of his plants is concerned; and among the many operations which he performs with more than usual success I was particularly well pleased with the appearance of his Orchids and fine-foliaged plants, and struck the moment I entered the stove with the peculiar sweet and balmy atmosphere of the house. There was a high temperature, and a more than usually pleasant feeling on entering from a vinery in which Grapes were ripening. It was not difficult to discover the means from which so desirable an atmosphere and so healthy growth arose. The amount of hot-water pipes from which the heat was imparted was quite double that usually met with, and they just felt a little more than milkwarm. Over the pipes there was a strong sparred trellis, and on the trellis were placed sheets of lead turned up at the edge, so as to form shallow trays, which were filled with water. Common garden saucers were turned upside down in the water, and on the saucers were the fine-foliaged plants; while most of the Orchids were suspended overhead. The atmo-

sphere thus produced was certainly the most pleasant for a stove that could possibly be conceived, and the plants gave ample testimony as to its healthful influence on vegetation. The water used in the trays was rain water, and could be drawn off at any time when it became necessary or desirable by means of a few taps in the bottom of the shallow trays.

The heat derived from so large a surface of pipes in proportion to the amount of atmosphere to be heated can never have that scorching effect that exists when it is derived from a smaller amount of heating surface violently heated; and the water in the leaden trays over the pipes gave that supply of moisture necessary to the development of healthy growth in such plants in a much more natural way and to a better-proportioned extent than is attainable either by syringings over the foliage or by evaporation from a strongly-heated surface. Besides this it is a well-known fact that with such a supply of piping as was used in this case the consumption of fuel is less. In any case it is a great mistake to so limit the heating surface as to render a violent heat necessary to keep up a given temperature.—D. THOMSON.

BORONIA RUTOSMA (RUE-SCENTED BORONIA).

Nat. ord., Rutaceæ. *Linn.*, Octandria Monogynia.—Glaucous, much-branched; leaves oblong-ovate or obovate, sessile, fleshy, apiculate, one-nerved; flowers in trichotomous, corymbose, many-flowered cymes, pedicels thickened beneath the flowers; calyx-lobes ovate acute; filaments ciliate in the lower half.



This very pretty *Boronia* is known in cultivation as *B. spathulata*, but does not appear to be the species so named by Dr. Lindley, differing obviously in its much-branched habit and its many-flowered corymbose inflorescence. The whole plant has a tendency to trichotomous branching, and thus forms a dense bush, with terete branches scattered with glandular dots, and bearing opposite, fleshy, glaucous, oblong-ovate, or obovate apiculate leaves, furnished with numerous transparent dots, and one-nerved. The flowers terminate the branches, forming a kind of corymbose cyme trichotomously divided; the pedicels are about an inch long, thickened at top; the calyx-lobes are ovate acute, brownish-green, dotted, and traversed by forked nerves. The petals are ovate, apiculate, patent, twice as long as the calyx, pink, becoming deep rose when dry. The eight stamens are as long as the calyx, ciliate in the lower half, covered externally above with round glands. The anthers

attached below the apex. The ovary is seated on a broad hypogynous disk twice its own width, and is dotted, four-celled, terminated by a simple style, with an obscurely four-lobed stigma. The cells of the ovary are two-ovulate, but only one seed seems to be perfected. The plant, both fresh and dry, has a strong odour of Rue.—(*Garden Companion*.)

MARKING TREES.

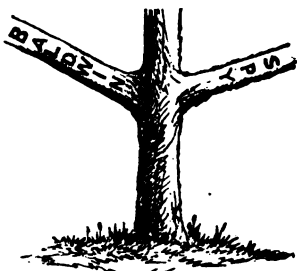
EVERY one has felt the want of some effective plan of marking fruit trees in the orchard. All sorts of labels have been tried; and most persons depend for strict accuracy on having a manuscript list made of the trees as they are numerically arranged on the ground. This is very well; but as one must have the list always about, or sometimes likes to graft several kinds on one tree, the plan is so far objectionable.

Now it is a well-known fact that the scratch of a pin on the bark leaves a scar that endures almost with the life of the tree. We were shown a Beech tree recently in Delaware county by a middle-aged man with the initials of his father still plainly traceable, which were scratched on the bark when his father was a boy. The same can be done with fruit trees, as we believe we saw suggested some years ago in an agricultural journal, but which, like a good many good ideas that yearly float over the great sea of the agricultural press, has nearly been forgotten.

We saw some trees a few days ago that had been marked in this way, and it reminded us that the idea was worth resuscitating.

The annexed cut will explain the idea clearly:

The letters of the name are scratched on the under side of the branch, and the letters one above the other. In the case we saw there were two kinds on the two arms of the tree—Baldwin and Northern Spy; the main or central stem being of another kind, the name of which we do not now remember.—(*American Gardener's Monthly*.)



RAPID DECAY OF ZINC TANKS.

ABOUT two years since I built a small greenhouse and propagating-house, which I heated by a tank of zinc covered with galvanised sheet iron, as being stronger to support the plunging material for propagating in than zinc. I found on opening the tank a few days since that a white deposit had formed on the under side of the sheets of galvanised iron, some of which I have scraped off and sent with this, and shall be much obliged if you could ascertain for me the nature of it. This deposit has fallen in places into the zinc tank and corroded it nearly through. The zinc is, in fact, worn into small holes, which are so nearly through that a pin penetrates them as easily as it would through brown paper.

My object in writing is twofold: first to be of use to any persons who may be about to make tanks of zinc in cautioning them not on any account to cover the tank with "galvanised iron;" and next, to ascertain what will be the most effectual and economical means to remedy this disaster. Would you recommend a wood tank or another zinc tank covered with slate? The tank worked so satisfactorily until it began to leak from the cause above stated, that I much prefer this plan of heating to that by pipes. If I put a zinc tank the present framework of wood would do; but if a wood one, it must be new altogether. I conclude that in the course of the circulation of the water some of this deposit must have gone into the boiler, and I suppose that if I have a new zinc tank it will probably be again discharged to some extent by the same means out of the boiler into the tank, and will, probably, again corrode the new zinc unless its effect has become neutralised by remaining some weeks in the boiler. Of course, I could have the boiler cleaned out, but I do not want to have to do this if possible,

as it will involve considerable trouble and some expense in removing the boiler and replacing it.—A COUNTRY CURATE.

[We cannot spare the time nor incur the expense of chemical analyses. The white deposit is such as will be generated in zinc tanks wherever the water is not very pure, and even then, in time, the metal will be corroded by the carbonic acid in the water and the oxygen in the air. In your case the corrosion would be accelerated by the galvanic action induced by the iron and zinc being in contact. A wooden tank covered with slate would be far more lasting and useful. We have seen galvanised iron used; but whenever an opening in the galvanic covering is made, the iron inside corrodes very quickly. We have had zinc tanks in addition to pipes to give more heat, and, strange to say, the lids corroded much sooner than the sides or the bottom. For cheapness and lastingness combined, we would recommend a wooden tank. If you still resort to zinc, you had better have a zinc covering likewise. In your case there would be several chemical combinations.]

ROYAL HORTICULTURAL SOCIETY'S COMMITTEES.—SEPT. 9, 1863.

FLORAL COMMITTEE.—The autumnal Exhibition of the Royal Horticultural Society was held on this day, and, as far as flowers and fruit were concerned, nothing more could be desired. The Floral Committee had much to occupy their attention. The entries for seedling Dahlias alone were very numerous, besides a long table well covered with other specimens for inspection. Not more than one-fifth of the seedling Dahlias exhibited received any notice beyond general approval; and out of the twenty certificates awarded this day, four only were first-class. The Committee have not awarded more than six first-class certificates to Dahlias of 1863. This most conclusively proves that this favourite florists' flower has arrived at its climax, and the innumerable good sorts now in cultivation cannot easily be surpassed by new ones. Our report must necessarily be a lengthy one; we shall therefore omit the description of the seedlings which received awards. They will doubtless be criticised by other writers in the Journal.

Dahlias—Mr. Wheeler, Warminster: Coronet, first-class; Watty, second-class; Symmetry, commended at the previous meeting. Mr. Kimberley: Messenger, second-class. Mr. Rawlings: Tom Thumb dwarf bedding variety, commended. Mr. Bragg, Slough: Useful, second-class; Garibaldi, second-class. Mr. Keynes, Salisbury: Anna Keynes, first-class; Samuel Bartlett, second-class; Magpie, second-class; Regularity, second-class. Mr. Burgess, Chelsea: Chelsea Hero, second-class. Mr. Turner: Prince of Wales, second-class. Mr. Legge, Edmonton: Roundhead, second-class; Enchantress, second-class; White Perfection, first-class; The Bride, first-class. Mr. Collier: Annie, second-class. Mr. Hopkins: Brunette, second-class. Mr. Perry, Birmingham: Sylph, second-class.

Messrs. E. G. Henderson, Wellington Road, exhibited a large and beautiful collection of the Pomponne Dahlias, some of them but a little larger than a Ranunculus, and as perfect in form. Beautiful and delicate in their colour and markings, they were much and deservedly admired. A special certificate was awarded them.

Messrs. Henderson exhibited also a very extensive and interesting collection of their far-famed variegated-foliaged Pelargoniums. Of this collection it is impossible to speak too highly. It was a great privilege for those who are now giving their attention to this interesting section of Pelargoniums (which we hope to see duly represented in our exhibition schedules for 1864), to have an opportunity of seeing so many and such good and distinct varieties brought together. We shall give their names for the benefit of those who did not see them, but who may feel anxious to lose no time in adding some of the best kinds to their collection:—Silver Chain, Lucy Grieve, Goldfinch, Miss Emily Dunelle, Rosette, Golden Harkaway, Snowflake, Mrs. Benyon, Golden Chain, Oriana Improved, Mrs. Pollock, Italia Unita, and a group of seedlings not yet named. A special certificate was awarded this most beautiful collection.

Some blossoms of Fuchsias from the collection of E. Banks, Esq., were sent by the same firm; they were extremely beautiful, and decidedly in advance of the Fuchsias of the present day. It would have been more satisfactory to have seen the plants; but the flowers, numbered 21, 46, 17, were all first-class, and if of good habit double-firsts—20, 40, 24 not being far behind them.

Phytolacca decandra foliis variegatis, also from Messrs. Henderson, received a label of commendation; *Centaurea argentea*, a very finely-cut foliated plant of dwarf habit, suitable for the edging of beds, and superior for the purpose to *Centaurea gymnocarpa* and *Centaurea candidissima*, first-class certificate.

Mr. Salter exhibited a collection of bedding plants, which were arranged to form a flower-bed, the background consisting of summer-flowering *Pompones Chrysanthemums*. The plants used were *Centaurea candidissima* and *gymnocarpa*, *Veronica incana*, *Oxalis rubra*, *Tussilago farfara foliis variegatis*, and *Amaranthus melancholicus*. Mr. Salter sent also a plant of *Gazania splendens foliis variegatis*, adding one more to his extensive and interesting collection of variegated-foliaged plants.

Mr. Saltmarsh, Chelmsford, sent scarlet *Pelargonium Princess Alexandra*, deep rose, flowers in a large truss, but not of sufficient quality. *Pelargonium Luna*, a promising variety, with golden foliage and marked with dark reddish-brown zones. Plants from cuttings will better decide its merits; it too much resembles Mrs. Milford. *Pelargonium Little Treasure*, small zonate foliage, bright scarlet flowers—the specimen exhibited was too old to enable any decision to be arrived at, some portion of the old plant producing very small foliage, while the younger shoots displayed a much more vigorous habit. It should be sent again, and will probably form one of the family of Mr. Cowper and Waltham Pet.

Mr. Banks, Sholden Lodge, sent a seedling *Verbena Lady Palmerston*; but no advance upon better varieties.

Messrs. Smith, Dulwich, sent seedling *Pelargoniums Excellent*, a useful kind for bedding purposes, a pale rosy salmon; *Silver Chain*, a fine white-bordered foliage variety; *Pelargonium Favourite*, white deep-bordered foliage variety—younger plants of these two promising plants will more fully display their merits; *Pelargonium Peacock*, a variegated-foliaged plant. *Anemone japonica Honorine Jobert*, a useful hardy border plant, the flowers resembling *A. vitifolia*—commended.

Messrs. Carter sent a collection of annuals, consisting of *Asters*, *Marigolds*, in all sizes and colours, *Helichrysums*, and some very fine double *Zinnias*.

Messrs. Veitch sent a beautiful collection of plants, among them three seedling hybrid *Orchids*, raised by their persevering foreman Mr. Dominy; *Cattleya exoniensis*, a very beautiful late-flowering variety with pale bluish flowers, the lower lip being marked with a deep rosy purple band, which terminates midway on the surface of the lip in a straight line, producing a very singular effect—second-class certificate. The other hybrids, *picta* and *hybrida*, have been described before. Among the other plants was a fine specimen of *Odontoglossum grande* covered with its peculiarly-tinted flowers, two specimens of *Lilium auratum*, *Lilium neilgheriense*, *Alocasia zebrina*, *Sciadopitys verticillata*, *Bambusa variegata*, *Dracena ferrea*, &c.

Mr. Bull, Chelsea, also sent a large collection of interesting plants:—*Adiantum cardiophyllum*, not a new plant, first-class certificate; *Pteris pellucida*, a very handsome Fern, first-class certificate; three varieties of *Caladium*; *Schizocasia Portei*, a form of *Alocasia* with a widely jagged cut leaf, which when in better condition will certainly prove a useful and ornamental plant; *Gesneria velutina*, with dark refulgent foliage; *Cupressus Barkeri*; *Adiantum (Cheilanthes?) radiatum*; *Drosera dichotoma*; *Areca species*, a very handsome Palm with deeply ribbed foliage, and many others. Mr. Bull sent also six cut specimens of *Pentstemons*.

From Messrs. A. Henderson & Co., Pine Apple Place, came a fine specimen of the Cotton-plant with its seed-vessels in all their stages, and when expanded displaying the growth of the valuable article of commerce.

Mr. Deaz, Shipley, sent a fine plant of *Cionidium Moorii*, a very beautiful Fern—first-class certificate.

Mr. Standish, Ascot, sent six seedling *Gladiolus*, four of which received certificates; *Randle Jackson*, bright carmine, commended; *Charles Davis*, a rosy-tinted scarlet, second-class certificate; *Mrs. Dix*, a beautiful white with pale pink blotches in the upper petals, lower petals feathered with bright crimson purple—this will prove a first-rate flower—commended; *Etna*, very bright light scarlet, commended. These flowers were exhibited in Mr. Standish's stand of twenty-four varieties. They would have made a better appearance had they been shown singly as seedlings. We noticed one very fine seedling, *Prospero* in Mr. Standish's stand of twelve *Gladiolus*. The *Gladioli* were not so fine as they were in 1861. Mr. Youell's fine collection was inferior to what we have seen—the individual flowers had not attained their usual size.

There were 10 seedling *Hollyhocks*. The miserable appear-

ance of stands of single flowers gave everybody the horrors. What is the beauty of the *Hollyhock*? Its magnificent and graceful spikes of flowers. Why, then, deprive this splendid garden ornament of its honours by exhibiting single flowers, which reminded us of the three pips of *Auriculas* at the Spring Exhibition in the Botanic Gardens, Regent's Park, 1862, which brought down such ridicule on the exhibitors? We trust the *Hollyhock* will be shown in 1864 in all its primitive splendour and grandeur.

FRUIT COMMITTEE.—Only a Sub-Committee met on this occasion, consequently no certificates were awarded. The most important object brought forward was a new Grape from Messrs. Lucombe, Pince, & Co., of Exeter, called *Mrs. Pince Black Muscat Grape*. The Committee were unanimous in considering it a Grape of great promise; but, failing in detecting a sufficient muscat flavour, wished to see it again when it could be examined in full Committee.

From Mr. Tillery, Welbeck, came a seedling *White Grape* raised from the *Trebbiano*, and said to be earlier than the *Black Hamburg*; also a bunch of *Welbeck Black Tripoli*, which always colours and is of very fine flavour. It was considered to be the true *Black Hamburg*.

Mr. Rust, gardener to the Right Hon. Lawrence Sullivan, Fulham, had a seedling *Peach* raised from *Late Admirable*. The fruit was large, yellow tinged with orange, but had not arrived at perfection.

Mr. Bailey, of Shardeloes, sent a seedling *Nectarine* called the *Shardeloes Nectarine*. In shape it resembled the *Violette Hâtive*, and in colour was darker than the *Elruge*. The Committee were of opinion that it was not better than the first-named kind.

A very good early *White Grape* of the *Sweetwater* breed came from Mr. Brown, gardener to Sir C. Knightley, Fawley Park; and Mr. Melville, Dalmeny Park, sent a new Grape, which was large-berried, grizzly or amber-coloured, very sugary, and rich, but its colour was objected to.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE season has been very favourable for operations under this head. Weeds could with half the usual trouble have been quite eradicated. Potatoes and other crops are coming off early, so that the process of manuring and trenching may be prosecuted at every favourable opportunity. As a general rule, it is recommended to mark the trenches 4 feet wide to throw up good-sized steep ridges. It is not advisable, if it can possibly be avoided, to dig the ground intended for general cropping one spit deep, even if the soil be shallow and the subsoil ungenial. It is much better to remove the top and to well break up the bottom of the trenches; depend upon it these operations pay for a little extra trouble, and now is the time to commence them. *Artichokes (Globe)*, cut off the stems as fast as the heads are used. *Broccoli*, earth-up the plants as they advance, it greatly promotes their growth; also, earth-up other plants that require it. Keep a watchful eye for the caterpillars. As soon as they are observed have them gathered off by hand, this being the only sure means of eradication. Remove all dead and decaying leaves from the *Brassica* tribe in general, to some ground under the process of trenching. *Carrots*, sow a few *Early Horn* in a sheltered place to stand the winter. *Celery*, the first earthing-up of the crop should not take place until it has made considerable progress. By commencing too early it is drawn up weakly, the earth to be closed round the stalks with the hand. *Endive*, tie-up for blanching when the plants are quite dry. Another plantation may also be made. *Onions*, a few *Welsh sown* now may come in useful where such things are in constant request. *Potatoes*, when the haulm is ripe to be taken up, as they are likely to grow again if showery weather continue, which will greatly deteriorate their flavour.

FLOWER GARDEN.

The favourable change in the weather will now enable those to proceed vigorously in their operations who intend making alterations or new arrangements in this department. As regards the formation of new plantations or the removal of large specimens, see that the ground has been prepared for the reception of the plants by trenching, and draining if the soil be moist and damp, for want of attention

to this, and especially to trenching the soil, the labour has in many instances been completely lost. Omit the barbarous mode too frequently practised of cutting off large portions of the roots. Whether the plants be large or small, be sure that the hole in which each is to be placed is large enough in its circumference to allow sufficient room for laying out the roots regularly and at full length in a horizontal position previous to covering them with soil. Deep planting too must also be avoided: rather have recourse to stakes to keep the plants steady, than that they should be sunk in the ground to such a depth as to insure slow but ultimately certain death. The four conditions necessary for success are—the trenching of the soil, the preservation and the regular distribution of the roots, and shallow planting. Sow the following annuals now on rather poor soil, and give them a top-dressing of manure in February, they will then flower freely in May and June. *Nemophila insignis*, *Collinsia bicolor* and *grandiflora*, *Godetia Lindleyana*, *rubicunda*, and *tenuifolia*, *Clarkia pulchella* and *alba*, *Eucharidium grandiflorum*, *Lupinus nanus*, *Gilia tricolor*, *Leptosiphon androsaceus* and *densiflorus*, and *Viscaria oculata*. All other hardy annuals may be sown about the middle of March.

FRUIT GARDEN.

Apples and Pears will now require constant watching to catch the favourable time for gathering, which must be as soon as they are detached from the shoot easily without using force. The plan of laying them in heaps to sweat, as it is called, will not answer for such as are required to be kept long, as it hastens the ripening process too much, and as a consequence decay will soon follow. Old Strawberry-beds intended to be left another season should have the runners and rubbish cleared out from them, and be well dressed with rich decomposed manure, but do not mow off the leaves. Strawberry plants in pots must not be allowed to be very dry, nor ought they to be drenched with too much water.

GREENHOUSE AND CONSERVATORY.

One of the first operations claiming attention at the present time is that of potting the bulbs, as much of the success of early forcing depends upon early potting. We never saw bulbs in finer condition than they are this season; they are not only large but sound and perfectly matured. Pinks and Violets must also be looked to; the latter, both for planting and blooming, to be planted out in a frame or pit. Remove those Azaleas which have set their blooms to the greenhouse, but the later kinds to remain in heat until the growth is matured and the bloom set. The greenhouse, if not already done, should be prepared immediately to receive the plants, as if we should have a return of the late frosty mornings, it will be advisable to house them without delay. In preparing the house let every part of the brickwork be lime-whited and the woodwork well scrubbed with soap and water and afterwards syringed with boiling water, to dislodge spiders and destroy the eggs of insects which have been deposited in the crevices of the wood, and look to the fires or hot-water apparatus, and see that everything is ready should severe frost come unexpectedly upon us. Have all the pots washed clean, and tie such plants as require it, so that there may be no delay in housing the plants should a change of weather render it necessary. Keep the structures open night and day after the plants are placed in them, only reducing the ventilation when unfavourable changes in the weather take place, and even then with particular moderation and caution, if sturdiness and blooming in mature perfection at the proper season are aimed at.

STOVE.

A certain and gradual reduction of temperature corresponding to the decline of external heat should be commenced. The plants will thus be prepared to withstand the prolonged gloom of the winter season. In the treatment of stove plants it is surely an error to act independently of exterior circumstances. The season and, in fact, variations of temperature, should be allowed in a certain and reasonable degree to exert their legitimate influence. Top-dress any plants that may require it, and see well to the drainage of all, especially established plants that have not been spotted for a considerable time.

PITS AND FRAMES.

Plants which have made their season's growth should be

freely exposed to sun and air on every favourable opportunity in order that the wood may be well ripened; but such as are still in free growth should be encouraged by every possible means while fine weather continues, keeping them rather close, guarding them carefully from cold winds, and giving a liberal supply of heated water at the roots. If anything requires pot room let such be shifted as early as convenient, keeping the atmosphere rather close, and watering very cautiously for some time afterwards until the roots take hold of the fresh soil.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

RUN the hoe through all advancing crops. Laid down some rather leggy Broccoli, so as to have the earth close up to the stem. Hoed young Lettuces, Spinach, and Onions. Took off the late Onion crop, not individually so large as usual owing to the dry season; and yet we have scarcely enough of those sowed for buttons, for our ground is too strong for growing them small, firm, and round as a marble, as we like to see pickled Onions, though we dare not eat them, for if we did our coat would have the odour of them for a month. The main crops of Onions will be strung on a wet day; and for this purpose, instead of depending on the stems plaited together alone, we generally have two or three stout straws of wheat plaited along with the stems. Onions so plaited in strings are very handy for taking into the kitchen, more especially if the bulbs are arranged in strings of the large, larger, and largest. If these are strung up dry, and kept dry, it matters but little where they are housed. We have seen fine close rooms made for Onions, and the chief advantage of such a place is that they grow and push out too early in spring. No place is better for them than an open shed, if thatched all the better. We have never known any amount of cold injure an Onion, provided it was kept dry. At least we have seen strings hanging against the wall of an open shed with the thermometer close on zero, and the Onions not injured in the least. A full-grown specimen is easily injured by extremes of temperature when subjected to alternations of wetness and dryness.

Housed all our early Potatoes in good condition; not a vestige of the disease to be seen, but we are not safe yet, as two years ago we harvested a beautiful lot without a speck, and in two months the sound ones had to be picked out. Cleared off decayed haulm of Peas as it became useless. Watered Cauliflower, the rain not having penetrated to the roots.

Earthed-up a little more Celery just to have enough to go on with, and have reason to be more and more satisfied with the Incomparable White Dwarf sent out, we think, first by Mr. Turner, of Slough. We have had immense Celery in September, and yet it did not please us half so much as this little kind. It is true we had a few gorgeous heads of the former to make people stare, but unless we covered it from autumn rains the very size of the plants kept the rains in their hearts, and caused the water to putrify and discolour the centre, if not to rot it outright. Here there is no such chance with our Incomparable friend. We can grow two or three plants for one of our old Giants; and if we grow the single plant as thick as our arm and 15 inches high, we can send a foot of beautiful, sweet, crisp Celery to table; and so long as people keep saying, "Never tasted such beautiful crisp Celery," we mean to keep to the Dwarf, and save the immense banks of earthing-up for all the Giants. Seriously, to all amateurs with little room we would say, Have your own Celery fresh for your cheese by growing the Incomparable. We find that some of our great gardeners in the north use it for the spring crops, because it is so hardy and dwarf; we should be inclined to give it the post of honour at all seasons. In general we must own we have been annoyed with Giant Celery. It passes through so many hands, from the gardener to the employer of the gardener, that it becomes reduced to a very little bit, and is so pared and pared again that a lover of Celery scarcely knows what is before him. Mind, we do not blame any one. Those who send up a tiny piece fit for a sparrow out of a bold stick of Celery do so from use and wont, and, as they think, for

the best. It often tells, however, against the growers. We know of one case where there was no end of grumbling about the Celery for cheese, but the employer and his friends happened to pass the vegetable-washing shed one day, and were quite enraptured with the Celery, and as instructions were given that the Celery should go to table exactly as it came from the gardener's hand, he has never heard a word about it from that day to this. A similar bother took place in another garden as to Sea-kale. Of course when blanched and about 6 inches high we expect the whole head as cut to form part of the dish that is sent to table; but the artiste of the kitchen was far too ethereal for such mundane treatment, and cleared all away but the little knob in the centre. The garden being little more than an acre in extent, no wonder that there were everlasting grumbings in the winter as to the deficiency of Sea-kale. What would have made six or eight good dishes cooked in the ordinary way for a good party, would not have made one in this *recherche* particular way; and so the grumbling went on until a great gardener was called in to give his opinion on the matter, and he candidly stated that thus treated, the whole garden put under Sea-kale could not yield a supply above six weeks. With such a mode of dressing and cooking it would hardly be possible for any gardener, except he had acres of Sea-kale, to be able to act on our favourite rule, which is to keep friends with the cook by always having plenty, and if at all scarce of anything, keep the knowledge of that scarcity to ourselves. To our young friends we would say that all this, to be done well, must be done in such a way that courtesy and a desire to oblige must ever appear paramount to firmness, and quite as transparent as integrity of character. We should feel we had not lived in vain could we impress our brethren with the vast difference conveyed with the words, "You must do," and "You will oblige by doing." A little courtesy does much to render pleasant the pathway of existence.

Other matters as to Mushrooms, Cucumbers, and other vegetables, much as before stated. The Mushrooms in our little beds have been so good that we have had no occasion to hunt the meadows. We are not much given to such dainties, but as the question is often asked as to the superiority of one kind of Mushroom over another, we must say that for our own eating we would much prefer those grown under our own care to any gathered from a pasture. We find that the cakes of spawn, especially the thin ones that Mr. Forsyth recommended to us as better than the thick ones, will soon do for spawning. We will make these cakes or bricks after this. This, though a small case, just illustrates the advantage not only of gardeners meeting each other, but the advantage that the employers of gardeners derive from their gardeners having an opportunity of comparing notes with their fellow gardeners. We are quite delighted to find that from various remarks on this subject in the Journal many gentlemen have not only given their gardeners the necessary time to make a tour and see what they could, but have also defrayed part or whole of the expenses. One most worthy man that called here had two five pounds put into his hands on leaving, and was told where to apply in London when that ran out. We feel sure that the money so spent will be seen in improvements many years hence.

FRUIT GARDEN.

Much the same as previous weeks. Find that since the rains Pears and Apples are increasing in size wonderfully, though some even now would be better of a little water at the roots to the extent of half a dozen of water-pails to a small standard tree. Figs are bearing well outside. Some in pots will be taken to a warmer place. Melons have had fresh linings given to those in frames, and others in pits have had the fruit elevated to keep them from cracking with the damp. More air and fire heat have been given to Grapes, not only to ripen late Grapes, but to keep them sound and free from damp. In some very warm days, with powerful sun, the floors, stages, &c., were slightly syringed with pure water to prevent the house becoming too dry, as that has a tendency to make Grapes quite ripe to slightly shrivel. Attended to Strawberry-pots for forcing. Went on clearing those in the open air. Gathered fruit as it ripened. Find that Peaches and Nectarines in the open air will be before their usual time this season. The Apples

chiefly in use for table are the Red Quarrenden, the Kerry Pippin, and the Strawberry Pippin. The Pears are chiefly Jargonelle and Williams' Bon Chrétien. The latter, with frequent gatherings of the largest, we manage to have in use at least six weeks or two months.

ORNAMENTAL DEPARTMENT.

Fresh arranged conservatory. Rolled walks and lawn. Picked over flower-beds, still beautiful. Tied-up tall plants. Picked off the flowers of Dahlias that had suffered from the drought. Put in cuttings of Geraniums as fast as we could get at them, so as not to injure the outline of the beds. Picked faded flowers from vases. Watered with manure water large Chrysanthemums in pots. Those who wish early Hyacinths and Tulips, should pot them as soon as possible in good loam, a little very rotten leaf mould, and a little silver sand. We prefer, instead of using much manure for such things in the soil, to use rich top-dressings and manure waterings. Those who wish an early display of bulbs for the flower garden should buy them as soon as possible. Place them on a north border, 3 or 4 inches apart, for Hyacinths, Narcissus, Tulips, and cover with 4 inches of loam and leaf mould. When the flower-beds are all cleared of their summer residents, well dug, and pulverised, these bulbs may be lifted in balls and planted, and never feel the moving. Moved a lot of Cassia corymbosa into a deeper pit to give more room. These were struck this spring. This is a splendid orange colour, either for out-door adornment in summer or conservatory-flowering at any time. Repotted Chinese Primulas into 32-sized or six-inch pots, ditto with Cinerarias for early blooming. Pricked off younger seedlings of Primulas and Cinerarias for succession, also herbaceous Calceolarias. Gathered seed of shrubby Calceolarias from beds, which seems more mature than usual. Syringed Violets in pots and beds with sulphur water, to disperse all trace of the red spider. Find that there was a mistake last week as to Geranium cuttings being an inch in size, as, though small, they are mostly above that size. They are planted about 1 inch apart. The tenderness of these are placed under glass, and to prevent shading they have a skiff from the syringe in the heat of a sunny day. The same as respects Verbena cuttings. A little damping of the foliage in the middle of the day is often much better than much shading. There would be fewer mischances did we always recollect that shading, if necessary, is a necessary evil. The good propagator will give it only when necessary, and remove it as soon as the cuttings or the plants can do without it. Took Camellias into the house; and Heaths, Epacris, and the better greenhouse plants should no longer be exposed to the lashing rains of autumn. —R. F.

TRADE CATALOGUES RECEIVED.

William Paul, Waltham Cross.—*Descriptive List of Strawberries and Grape Vines.*

Barr & Sugden, 12, King Street, Covent Garden.—*Floral Guide to Winter and Spring Gardening.* 1863.

F. & A. Dickson & Sons, 106, Eastgate Street and Upton Nurseries, Chester.—*Catalogue of Dutch Flower Roots.* September, 1863.

B. J. Edwards, 222, Strand, London.—*Autumn Catalogue of Hyacinths and other Bulbs.*

COVENT GARDEN MARKET.—SEPT 12.

Fruit and vegetables of all kinds continue plentiful, and in all respects the supply of the different kinds, as well as their prices, differ little from last week. Grapes, Pine Apples, and Melons are in abundance. Some Marie Louise and Louise Bonne of Jersey Pears are making their appearance; also Ribston Pippins, which promise well. Of other dessert Apples the supply is rather short. Filberts and Cobs have somewhat declined in price; the latter may be obtained in excellent condition at from 45s. to 50s. per 100 lbs. The Potato market is still heavy. Flowers the same as last week.

FRUIT.

	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
Apples ½ sieve	1	6	to	4	0	Nectarines doz.	2	0	to	5	0	
Apricots doz.	0	0	0	0	0	Oranges 100	10	0	14	0		
Figs doz.	2	6	3	0		Peaches doz.	2	6	12	0		
Filberts & Nuts 100 lbs.	55	0	65	0		Pears bush.	0	0	0	0		
Grapes, Hamburgs. lb.	1	6	6	0		dessert ½ sieve	2	6	5	0		
Muscats lb.	3	0	6	0		Pine Apples lb.	3	0	6	0		
Lemons 100	8	0	12	0		Plums ½ sieve	3	0	6	0		
Melons each	1	4	0	0		Quinces bush.	0	0	0	0		
Mulberries doz.	1	0	0	0		Walnuts bush.	14	0	20	0		

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad..... bush.	0	0	0	0	Leeks..... bunch	0	0	0	0
Kidney 1/2 sieve	1	6	4	0	Lettuce score	1	0	2	0
Beet, red doz.	1	0	1	6	Mushrooms pottle	1	0	2	6
Broccoli bundle	0	0	0	0	Must. & Cress, punnet	0	2	6	3
Cabbage doz.	0	9	1	3	Onions bunch	0	4	0	6
Capicums 100	1	2	2	0	pickling quart	0	6	0	0
Carrots bunch	0	6	0	8	Parley bunch	0	3	0	4
Caulliflower doz.	3	0	5	0	Parsnips doz.	0	0	0	0
Celery bundle	1	6	2	0	Peas..... bush.	0	0	0	0
Cucumbers doz.	2	6	10	0	Potatoes sack	5	0	8	0
pickling..... doz.	0	8	1	0	Radiates doz. bunches	1	6	2	0
Endive score	1	3	2	6	Rhubarb bundle	0	0	0	0
Fennel bunch	0	0	0	0	Savoy..... per doz.	0	0	0	0
Garlic & Shallots, lb.	0	8	0	0	Sea-kale basket	0	0	0	0
Gourds & Pumpk., each	0	0	0	0	Spinach sleeve	1	6	2	0
Herbs bunch	0	3	0	0	Tomatoes 1/2 sieve	2	6	5	0
Horseradish ... bundle	1	6	4	0	Turnips bunch	0	3	0	6

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

TRITOMA UVARIA CULTURE (J. L.).—Tritoma uvaria requires nothing that we know of beyond a deep, rich and moist soil to induce it to flower. It flowers freely with us in the early part of October. We should say your fine healthy plant will yet flower, the latter part of August being quite early enough, even for East Cornwall, to look for the flower-spike of this plant. We should think it is quite hardy with you; but a few inches of cocoa-nut fibre put over the crown on the approach of severe weather will make all safe. Remove the offsets in the spring immediately on the plant commencing new growth.

GLADIOLUS DISEASE (An Old Subscriber).—Your flower was smashed. Our correspondent says, "*Campanula garganica* is a good trailer."

COMPOST FOR GERANIUMS.—CUTTINGS OF BEDDING PLANTS (An Amateur).—We think your compost well aired and turned might do very well for Geraniums, &c., in small pots; but for larger plants we should be doubtful unless we saw it. Much will depend on the airing and the sweetness. We would not be liberal with dung or soot until fairly tried. We suspect your cuttings have been kept too close and too moist. We can hardly advise you how to succeed with them and the Grapes too, as too much damp will also injure the Grapes; but instead of planting we would advise you to put the cuttings in pots, and then you can more easily move them.

SEEDLING PRIMULAS (Idem).—The *Primula sinensis* if potted now, four in a small pot round the sides, and in a month or six weeks potted singly, will flower nicely next spring.

PREVENTING ENCRUSTATION IN BOILERS (J. Kearns).—We know of no better remedy than sal ammoniac, an ounce to sixty gallons of water, but the oftener the boiler is emptied the better. We think if potash or soda were mixed with the water and allowed to stand several days before being put into the boiler, that the evil would be lessened; but then it might not suit the purpose, for which the boiler is used. All boilers will become encrusted with such water.

COCOA-NUT REFUSE FOR POTTING (J. L.).—Cocoa-nut dust is a good material for plants of any kind, from a Pine down to a Strawberry, and from an Orchid to a Calceolaria. All plants thrive well in it.

HEATING A SMALL HOUSE AND CUCUMBER-BED (O. H.).—The pipes in the bed had better be covered with 6 inches or so of rough rubble, clinkers, &c., and then an inch or two of fine washed gravel—leaving only the fine little stones. An inch of cement might go over this so as to give you a smooth firm bottom, then about 15 inches of soil. If you go deeper with the pipes they will be less effectual. For such a house and to have fruit so early we would like three four-inch pipes on each side for top heat and on the same level.

REUS SUCCEDANEA (Sumach).—Unless under very favourable circumstances we fear this effective plant will not prove quite hardy with you. It is, however, well worthy of a trial in some of the lovely sheltered corners in the upper part of your unique grounds, or on a conservatory wall. A hot position with a light dry soil are the most likely conditions to that proper ripening of the wood, which with slight protection, may enable it to stand the winters of Bucks. But you are too well informed on all these matters to require any instructions for your guidance. We shall be happy to hear how it succeeds with you.

DISEASED VINES (B. A. S.).—You have a fungous rust on the Vines, the result of over-moisture at the roots, or an over-close moist atmosphere in the house. The first remedy is more air and heat in the house, a little sulphur on the walls or the heating medium, and if that does not answer, lifting the Vines or more drainage.

HARDINESS OF CUPHEAS (J. L.).—Cuphea emmens and the Crystal Palace specimen are probably hardy in East Cornwall. Try them. Cupheas in pots require about as much water as a Fuchsia—just enough to keep them growing in winter, but abundance when growing and flowering in summer.

UNHEALTHY ORANGE TREE—HOYA BELLA (C. Churchill).—We think the excessive flowering of the Orange and the bad health afterwards are owing to dryness at the roots. Soak the whole ball in a tub, allow it to drain afterwards, and until growing freely use nothing but clear soft water. In spring give all the heat you can, so as to promote free growth. Keep rather dry in winter. Strong manure now is like presenting beef-steaks to a poor invalid who can only sip a little liquid. You may allow the Hoya to bloom, but take it to the warmest end of the greenhouse and keep it rather dry all the winter, keeping the stems succulent by syringing them frequently, rather than by giving much water at the roots.

TEMPORARY HEATING A SMALL GREENHOUSE (P. F. M. F.).—The paraffin lamps will be better than the candles; but two would be of little use in a severe night and no protection used. We would recommend as the simplest and best, a small iron stove with a wrought iron tube through the roof, and a flat top, so that you may place a vessel or vessels of water over it. We think the plants will be safer in pots or boxes set on the border, instead of being planted out in such circumstances. You can more easily examine, move, and do what is wanted to them. A stove about 30s. complete ought to do all you want. If the fire-box is free of the sides so much the better.

SHELF FOR GREENHOUSE (Mrs. West).—You cannot do well with less than 2 feet clear round the fountain. The end shelves or platforms may range from 2½ to 3 and 4 feet in width. You would see the whole matter referred to the other week. The plants will not suffer from the air being admitted as proposed, but it must be done moderately at the sides in cold weather. The air at the top would then be the principal thing.

HEATING A SPAN-ROOFED FORCING-PIT (Yorkshire Subscriber).—The cheapest plan would be to take a strong flue along the centre and make the top of the fine the pathway. The best way would be to take two four-inch pipes round the house for top heat, and continue the linings as now. You will find much in the present and late Numbers to suit your case. Of course if you wish two hotbeds, one on each side, the best plan would be to have two pipes on each side for bottom heat, and two for top heat.

DENDROBIUM CHRYSANTHUM TREATMENT (Orchidophilus).—You had better give a little warm water now to the Dendrobium, but not much until a good many buds are opening.

COKE FOR HEATING (Idem).—There will be no difficulty as to the coke; if broken small and a damper used it will keep alight quite as long as coal, and after lighting there need be little smoke. This will be lessened by introducing a small stream of air, by pipe or otherwise, over the fire-place.

STACHYS PALUSTRIS AS A SUBSTITUTE FOR ASPARAGUS (Stachys palustris).—This is a native, deciduous, herbaceous plant, growing 2 feet high, and has purple flowers in August. It is commonly known as Marsh Woundwort, or Clown's All-heal. The root is tuberous, and is used in the non-corn-producing countries of Northern Europe as a substitute for bread in times of scarcity. Dr. Hogg, in his "Vegetable Kingdom," says, "The tubers contain a large quantity of nutritive fecula, which is made into bread in the north of Europe in times of scarcity, and from which starch can be obtained. These were called by the old writers *Panax colona*. The underground stems are of the size of small Asparagus, and are eatable." We have not seen the stems of this plant used so extensively as the young shoots of the Wild Hop (*Humulus lupulus*), as Greens by country people, though we have known some do so, and they pronounce them to be delicious. We have eaten the shoots of the wild and cultivated Hop after being boiled like Asparagus, and like them better than woody Asparagus with about an inch of eatable head to suck, and consider them equal to it when the Asparagus is stale its entire length as it ought to be, and as Hop-buds, as country rustics term them, always are. The plant in question grows naturally in moist low pastures or meadows, and so requires a moist soil to grow in. Were we going to cultivate it we should dig the ground deeply, even trenching it 2 feet deep, and when this was done cover the plot with manure 6 inches thick, and fork it in, and divide the ground into beds 4 feet wide, pointing north and south, with two-foot alleys between the beds, driving a stake at each corner of the beds. We would then place the roots on the surface, a row along the centre 1 foot 6 inches from plant to plant, and the like distance between the rows, placing the plants in the outer rows in quincunx arrangement. Throw out the alleys over the beds, covering them 3 inches with soil above the crowns of the plants, levelling the surface with the spade, but not beating it. The best time to plant would be in March. The plants would need watering copiously in dry weather, and weeds to be removed at all times when they appear. The stalks to be cut off in the autumn after they decay, and 6 inches of partially decayed leaves spread over the beds. The stems would strike through the leaf mould in the spring, when they would be cut off 6 or 8 inches below the surface, similar to Asparagus, and boiled and served up in the same way. We have no doubt that *Stachys palustris* which has stems as thick as small Asparagus in a wild state, would become the thickness of well-grown Asparagus shoots by liberal treatment, just as Asparagus itself, Sea-kale, and many other plants, which were used from time immemorial, by the rustic population, have become under cultivation the pride of the dinner-table, and of so much import to man as to become articles of commercial importance. The plant would not thrive in light dry soil unless it were very rich, and watered abundantly in dry weather; but in such soils the Hop grows freely, and gives a supply of shoots, which might become finer and larger by cultivation, that are not inferior in tenderness and flavour to any vegetable we possess. The best way to obtain plants would be to apply to some friend in the country, or a dealer in herbs would probably obtain them for you. We have heard the same tale about Chestnut leaves being poisonous, but have used them without any deleterious results. Oak, Beech, &c., make the best leaf mould, but there is not so much difference after all between the leaves of one tree and that of another genus after they become decomposed. Leaf mould from Chestnut leaves contains more potash than any other; but in other respects it does not differ materially. Some people say manure poisons coniferous trees; and, probably, the same people will tell you that Chestnut-tree leaves are poisonous to any plant to which they are applied. We advise you to try them.

NAMES OF FRUIT (W. N. S.).—You should have sent the leaves as well as the fruit of your Peaches and Nectarines, as the character of the glands is very important in determining the names. 1 appears to be Royal George; 2 was too much bruised; 3, a Clingstone Nectarine, apparently Newington; 4, hard and unripe; 5 and 7, Bellegarde; 6, Noblesse; 8, Grosse Mignonne; 9, Elruge. (W. Harrison).—Your Plum, which arrived in very bad condition, is the Diamond. (Old Subscriber).—We cannot undertake to name so many as thirty sorts of unripe Apples. Correspondents must be reasonable in their demands upon our time in this respect. 31, 32, Royal Muscadine.

HEATING A VINERY (T. H. L.).—Your plan will answer admirably for pot Vines; but unless you make your flue wide enough, so as to borrow top heat for the house from it, you will not be greatly better-off for your early ripening of the general crop. We think you may do so. No plan could be worse than having a tier of flues against the back wall only. You have also a fine opportunity of renewing your vinery by planting in that border outside, and then making openings in your outside wall. If the house is wide you might shut-in a part longitudinally, so as to forward the Vines in pots before forcing the others. Glazed earthenware pipes are capital for heating where you can place them on the level, and where they are not likely to be injured by clumsy labourers. Mr. Niven, of Drumcondra, and others use them largely.

MADAME VAUCHER GERANIUM (Devoniensis).—If you supply Madame Vaucher Geranium liberally with water at the root it will prevent it from turning pink when planted out. When turned out of pots such plants are apt to suffer from dryness at the root till they take hold of the ground, and we know that when exposed to drought this Geranium assumes a pink shade; but so soon as the ground is well watered it regains its usual colour.

DESTROYING WOODLICE (A. B. C.).—If you can pour boiling water into crevices between the brickwork and wooden framework, it will certainly destroy your troublesome pests. If it is not possible to introduce boiling water into the haunts of the woodlice, the most effectual way will be to raise the framework and destroy all of them that you possibly can; and then scrape away all the loose mortar, and bed the woodwork firmly down on to a layer of Portland or Roman cement, so that every crevice may be filled up and defy their making use of such a retreat. To destroy the stragglers that may have taken up their quarters inside the frame, boiling water may be applied to the inside of the walls, on which they are generally found creeping, after dark. Poisoned fruit, such as Pears or Peaches, laid in the frame at night will also destroy them, as they are fond of feasting on fruit. Toads are great enemies to them, and one or two such lodgers will make short work of great numbers of them. Any or all of these remedies will enable you to overcome your marauders.

FRUIT TREES FOR POT-CULTURE (A. B. C.).—The following varieties of fruit trees for pots will answer your purpose:—*Apricots*.—Moorspark, Royal, Large Red. *Peaches*.—Early York, Royal George, Violette Hâtive, Noblesse, Walburton Admirable, *Nectarines*.—Violette Hâtive, Pitmasston Orange, Elruge. *Plums*.—Green Gage, Kirke's Seedling, Jefferson, Coe's Golden Drop. *Grapes*.—Royal Muscadine, Black Hamburg, Chaptal. Although you do not ask for advice regarding the arrangement you propose in the cultivation of these fruits in pots, having at the same time Vines trained over them near the glass, it may be remarked that in order to succeed with the fruit in pots the Vines over them must be trained much wider apart than is usual when a house is devoted to the growth of Grapes entirely, otherwise the fruit trees in pots will not receive that amount of light and air necessary to their well-doing. If possible it would be much more satisfactory if the trees in pots could have a division entirely to themselves. It will not be easy to succeed with them; and, at the same time, secure a crop of early Grapes over them.

GNAPHALUM LANATUM (N. W. B.).—*Gnaphalium lanatum* is a hardy herbaceous plant, therefore likely to stand the winters of Norfolk.

RUSSELLIA JUNCICA CULTURE (Idem).—*Russelia juncica* is a stove plant from Mexico, and one of the most graceful plants in cultivation. It requires a compost of equal parts turfy loam and fibry peat, chopped with a spade, but not sifted unless through a riddle with inch meshes, and a liberal admixture of silver sand. We presume yours is a small plant; if so, pot it and keep it in a moist atmosphere to induce free but not luxuriant growth. Shift into a pot a size larger immediately the roots reach the sides of the pot. Repeat the same until the plant attains the size you wish, when you will give the last shift, double the sized pot of any of the former being employed. When this pot becomes full of roots the plant will show flowers; but much will depend on pinching the strong shoots back when they are a foot in length. The branches may be tied to a stick, from which the laterals droop gracefully. It flowers more abundantly on moderate than luxuriant growth. You will therefore stop all strong and rampant growths, encouraging the weaker until growth begins to slacken, when stopping will be discontinued and syringing too, the plant being kept drier at the root and less moisture given above. Any straggling blooms to be removed if they appear whilst it is growing. Sudden changes of temperature are inimical to its well-being; and it rarely does well after flowering once, consequently young plants must be ready to grow on to supply a worn-out specimen. It is easily propagated, either by single joints of the shoots or cuttings in a little bottom heat, or from suckers and division.

TUBEROUS TROPÆOLUMS (E. L. C.).—The seeds of tuberous-rooted *Tropæolums* are best sown immediately after they are ripe in sandy peat and loam in a cucumber-frame, or where a bottom heat of about 75° prevails—top heat about the same. The seeds are best placed separately in thumb pots, for they can then be shifted into larger pots as they advance in growth without disturbing the roots. When the plants are fairly up remove them to a warm greenhouse and near the glass, placing a small stick for the plant to climb up in the pot. The seedlings will need but one shift the first year, say into a 48-sized pot. When they have grown as much as they will and the leaves begin to turn yellow, lessen the supply of water, gradually dry them off, and give them a rest of three months by keeping the tubers dry in a cool place. Pot early in September in after-years, and grow in a warm greenhouse, giving abundance of air and all the light practicable. *Tropæolum tricolor* usually commences growing in September, growing on through the winter and flowering in April in the greenhouse; dying down immediately after flowering, when the pot may be laid aside until September in a dry cool place. It is then to be potted and trained on a fan-shaped or some other trellis. The seed may be sown now in a little heat not more than 75°, nor less than 65°, or early in February on a gentle hot-bed; but it is best to sow them immediately they are ripe.

GARDEN-PLAN. (Asker).—We are sorry that we can only reply to you, as we have replied to others—we never arrange the planting, or recommend the plants to be employed. We only criticise what our correspondents propose doing, and point out their errors, if any.

ALOCASIA METALLICA (C. S. N.).—You will find an article on this plant in another column.

PORTRAITS OF FLOWERS. (N.).—"The Botanical Magazine," "The Floral Magazine," and "The Florist and Pomologist," are all published monthly, and furnish valuable accounts of flowers and fruits.

POKE (B. A. S.).—In the Southern States of America it is cultivated for use as Asparagus and Spinach, and a very nice vegetable it is. If you were to take a stroll in the morning into some market—say New Orleans, you would be led to exclaim, "What is this we have stacked-up here?"—E. B. SPENCE.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (T. F.).—Your Ferns are—1, *Adiantum assimile*; 2, *Adiantum tenerum*; 3, One of the *Dennstedtias* (*Dicksoniæ*), and apparently *D. nitidula*; 4, *Nephrolepis exaltata*. (Tyro).—1, *Blechnum spicant*, the common hard Fern; 2, *Athyrium rhoticum*, the erect Lady-Fern; 3, *Asplenium adnigrum*, the Black Spleenwort; 4, *Lastrea cristata*, the Crested Buckler-Fern; 5, *Cystopteris fragilis*, the Brittle Bladder-Fern. (C. B. H.).—Only seventeen specimens! and some of them leaves of *Begonias*. It is perfectly unreasonable to expect us to name more than three or four at a time. 1, *Cyrtomium falcatum*; 2, *Lastrea aristata*; 3, *Anemidictyon phyllitidis*; 4, *Pteris granitfolia*; 5, *Adiantum capillus-Veneris*; 6, *Blechnum brasiliense*. (F. C.).—Your plant is the *Veratrum nigrum*, a noble plant for the shrubby border. The Passion-Flower you mean is the *Passiflora corulea*, the most hardy, if not the very handsomest, of the genus. (G. E.).—1, Common Fleabane, *Inula dysenterica*; 2, Common Centaury, *Erythraea centaurium*; 3, Eyebright, *Euphrasia officinalis*. (Eaton Chf.).—We do not undertake to name a plant from a leaf only. We believe yours to be from the common *Hydrangea*; and the *Geranium* was too fallen to pieces to be judged. (Old Subscriber, J. C.).—*Hedychium Gardnerianum*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

FRESH GROUND FOR CHICKENS.

We cannot help thinking much good might result and great information be derived if amateurs would be more communicative one to another through the columns of periodicals devoted to the objects in which they are interested. Many of the queries sent to us are evidently from competent and observing people, and afford ample evidence of the ability of the writers. Such, while they want information on one point, could evidently afford it on twenty. One has written to us on "Tainted Ground." Although he has four or five acres at his disposal, yet, for security's sake, he has reared his chickens for years in a small enclosed space. They did well for two or three years; but afterwards, although supplied with all they could require, the chickens languished, many died, and the survivors were sickly. He was not a man who would accept such a position without inquiring the cause, and was soon told by a gamekeeper the ground was tainted, consequently unfit for rearing chickens. The assertion was to be tested by the removal of a brood that was daily becoming less to the open space. They recovered directly. A change of ground is good for old birds; but it is necessary for chickens that are artificially kept. There is not on a lawn or small paddock the constant change of surface there is in a farmyard, nor is there the same process of natural chemistry in operation. Where Pheasants are bred in large numbers, it is a common thing to be obliged to relinquish ground possessing every advantage, because it is tainted. Birds will not grow up—they cannot be reared upon it. The old birds are not affected by it; but even in them, as in the human being, change of air and scene are beneficial. It is impossible to say in what this taint consists. Analysis has failed, so has dissection. Wherever it can be done, prudence would, therefore, dictate that the spot where chickens will be put with the hens under the ribs should be as much as possible kept quite free from poultry till it is required for the purpose. We have no doubt many of the complaints we receive of inexplicable deaths from no apparent cause, and spite of every precaution, provision, and provision, may be attributed to this cause. Mooting the subject may, perhaps, turn the attention of competent people to it.

MANCHESTER AND LIVERPOOL POULTRY EXHIBITION.

THE Manchester and Liverpool Agricultural Society held its first meeting in the year 1847. It was then constituted by the amalgamation of the Manchester Society, whose first meeting dates back so far as 1767, with the Liverpool Society, formed in 1830. With, therefore, an undivided interest, and embracing so populous a district as that in which its annual meetings now take place, the natural result has been progressive improvement; and it is patent to every one that any feature that might by its utility and popularity add to its advancement in public favour, has invariably received the ready and earnest attention of its controllers. This Society enjoys also the untiring help of its indefatigable secretaries, Mr. Ryder,

whose energies are thus annually severely taxed in connection with this Meeting. Courteous to every one, and with ready advice to any exhibitor requiring it, it is only fair thus to admit the Manchester and Liverpool Meeting is in no slight degree indebted to this gentleman's personal exertions for its present high position.

To give a slight idea of the gigantic proportions of this year's meeting we at once consult the printed catalogue. In it we find registered no less than 3141 entries, entailing an amount of labour in its management none others than the actually experienced could imagine. This total of entries, of course, included horned cattle, horses, sheep, pigs, implements and machinery, grain, roots, cheese, butter, fruits, flowers, and last, though not least, dogs and poultry. So vast a display as that of this year, and one so well calculated to amuse and instruct the public eye, has rarely been exhibited at a single meeting.

The carrying-out of the general arrangements was entrusted to the Messrs. Jennison, of Belle Vue Gardens, near Manchester; and although compelled to do battle with most unpropitious weather, these gentlemen eventually brought all to a favourable conclusion. The day and night also previous to the Show being opened was one continuous heavy rain, nor at the break of day was there any symptom whatever of abatement. About seven or eight o'clock, however, and this only just as the Arbitrators were about to commence their duties, the sky suddenly cleared, the sun broke brightly, and every face beamed with congratulation at a result all had deemed, till now, an utterly hopeless one. But expressly to the poultry.

This department contained considerably beyond 200 pens, and as a whole, the collection was unquestionably a good one. It is true many classes were damaged in appearance (particularly to the inexperienced eye), by the bulk of the specimens being then in full moult; but as at this season it is useless to expect anything different (because naturally so), the few remarks we purpose offering our readers will not bear particularly on this shortcoming.

The Black Spanish class was a strong one, the well-known breeder Mr. Rodbard, of Aldwick Court taking both first and second positions. The quality of the faces of this gentleman's chickens was quite beyond exception; but we cannot help noticing that these birds were of a very diminutive size when compared with many shown from the same yards during past years. The same amount of character, combined with a larger size, would be a decided improvement. In Grey Dorkings Captain Hornby was pre-eminent, all his specimens being quite above the remaining competition—in short, they were all exceedingly well-built large early chickens, and matched most effectively. The moult of the Game fowls told seriously against them, but here again Captain Hornby stood well. Mr. Julian, of Beverley showed also some very worthy birds of these varieties. In Cochins the muster represented many of the first things of this year from our most noted amateurs. Our attention was particularly directed to a feature, that though somewhat general in the Buff Cochins class, by no means justifies the practice—viz., the exhibition of Silver Cinnamon pullets with a Buff cockerel. Another very fatal objection ruled rather heavily against the interests of several exhibitors. It arose from dropping and waved combs in one or more pullets, though otherwise unexceptionable. From these shortcomings the Cochins classes, though "very taking at first sight," would ill bear to be closely scrutinised. The Hamburgs were a very strong feature of the Show; and the *Polands* though few in numbers were decidedly good. Harvey Dutton Bayly, Esq., stood far above competition in the *Bantams* classes. It was as complete a "walk over" as we could imagine.

In Aylesbury Ducks, Mrs. Seamons stood as completely beyond the reach of rivals, even a single glance of the Judges determining all the three prizes in her favour. In Rouen Ducks faulty bills were sadly prevalent, though the class was most extensive. It is well worthy of remark that a faulty Duck of this breed as to her bill, nearly without exception, perpetuates the failing in every duckling. To breed from such is the certain forerunner of disappointment; and as a selection may be made at a very early age, to hand over to the cook at once such ducklings as are evidently not fit for exhibition would prevent much unnecessary

outlay, besides providing for the table at a time when their appearance thereon would be decidedly far the most acceptable.

The *Turkeys* and *Geese* were as good as we have seen this season. The rage for exhibiting two, or even three *ganders* together instead of a male and two females seems, however, to extend itself.

Decision on the part of our poultry Judges must be here called into action, or sales of these really useful birds will fall sadly below what has been the usual demand. We know several agriculturists whose hopes have been thus frustrated, and their tempers not a little soured into the bargain, by having eventually to roast a large proportion, and perhaps all of a pen of so-called *Geese* thus "claimed" at high prices.

DORKINGS.—First and Second, Capt. W. Hornby, Prescott. Third, J. Robinson, Garstang.

SPANISH.—First and Second, J. B. Rodbard, Warrington. Third, W. Woolley, Hunbury.

GAME COCK.—First, H. M. Julian, Beverley. Second, J. Fodden, New Ferry. Third, C. W. Brierley, Rochdale.

GAME (Black-breasted Red).—First, H. M. Julian, Beverley. Second, Capt. W. Hornby, Prescott. Third, W. Gamon, Chester.

GAME (Brown-breasted Red).—First, Capt. W. Hornby, Prescott. Second and Third, J. Wood, Wigan.

GAME (Any variety).—First and Second, J. Holme (Duckwing). Third, C. P. Ackers, Wigan (Duckwing).

COCHIN-CHINA (Buff or Cinnamon).—First and Third, T. Stretch, Ormskirk. Second, G. Fell, Warrington. Highly Commended, G. Fell. Commended, E. Musgrove, Ormskirk.

COCHIN-CHINA (Grouse and Partridge).—First, T. Stretch, Ormskirk. Second, E. Tudman, Salop. Third, Capt. Heaton, Manchester. Commended, T. Stretch.

HAMBURGERS (Golden-pencilled).—First, Messrs. Carter & Valiant, Poulton-le-Fylde. Second, J. Dixon, Bradford. Third prize withheld.

HAMBURGERS (Silver-pencilled).—First, H. Pickles, jun. Skipton. Second, J. Dixon, Bradford. Third, J. Platt, Bolton. Highly Commended, S. Fielding, Middleton.

HAMBURGERS (Golden-spangled).—First, J. Dixon, Bradford. Second, S. H. Hyde, Ashton-under-Lyne. Third, J. Roe, Manchester.

HAMBURGERS (Silver-spangled).—First, J. Robinson, Garstang. Second, J. Dixon, Bradford. Third, T. Rigby, Winsford.

POLANDS.—First and Second, J. Dixon, Bradford. Third, P. Unsworth, Warrington.

BANTAMS (Game).—First, T. H. D. Bayley, Biggleswade. Second, J. W. Morris, Rochdale. Third, J. Dixon, Bradford. Commended, W. Lawrenson, Poulton-le-Fylde.

BANTAMS (Any other variety).—First and Second, T. H. D. Bayley, Biggleswade. (By some mistake both this gentleman's pens of *Sebrights* were exhibited in one pen. The Silver-laced stood first, and the Gold-laced second.) Third, J. Dixon, Bradford.

ANY OTHER BAKED.—First, J. Dixon, Bradford (Black Hamburgs). Second, W. Dawson, Hopton (White Cochins-China). Third, Mrs. M. Seamons, Aylesbury (Brahma Pootra). Highly Commended, H. B. Lee, Bewdley (Brahma Pootra); J. Robinson, Garstang (White Dorkings).

GOULINS.—First and Second, D. B. Davies, Knutsford (White and Grey). Third, T. Burgess, Whitechurch (White).

DUCKLINGS (Aylesbury).—First, Second, and Third, Mrs. M. Seamons, Aylesbury.

DUCKLINGS (Rouen).—First, J. Holme, Knowsley. Second and Third, W. Gamon, Chester.

DUCKS (Any other breed).—First, F. W. Earle, Prescott (Black East-Indian). Second, J. Dixon, Bradford (Grey Call). Third, C. P. Ackers, Wigan (Wild). Highly Commended, J. B. Jessop, Hull (Black East Indian).

TURKEYS.—First, Capt. W. Hornby, Prescott. Second, J. Dixon, Bradford. Third, J. Ellis, Hale Bank.

EXTRA STOCK.—Commended, Mrs. G. H. Cook, Hartford Hall, Cheshire.

Mr. John Douglas, of The Cottage, Ellenhall, near Eccles-hall; and Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, near Birmingham, were the Judges.

KEIGHLEY POULTRY EXHIBITION.

TWENTY-ONE years have now passed away since the first agricultural Show was held at Keighley, and for about the half of that period the addition of poultry has led to a great increase of its attractions. It is a gratifying result for us to announce that the meeting of last week not only showed a large increase in the number of entries over those of previous years, but a still more important feature was that the poultry competing was as good as can be met with at the largest of such exhibitions. Although the weather for the last few days proved most precarious and unpromising, most luckily the day on which the Show was actually held proved quite a fine one, and by this happy coincidence a company far beyond precedent assembled at Keighley. That the Committee really work hard to insure success must be obvious, even at first glance, among those who attended last week, and this has always been so. Their just reward is pretty well expressed by the somewhat quaint inscription that met the eye among some of the first on

leaving the railway station, "Perseverance wins the day." Similar banners, expressive of a varied host of sentiment, evidently the first impulses of their respective owners, we had almost said, filled up the streets from the station to the show-yard, combined with such quantities of evergreens and paper flowers as to be really astounding, nearly every spare yard of space being thus temporarily dressed out. A volunteer rifle band proved a really good help to carry out the festivities of the day. As the clock struck the hour of six the church bells rang merry peals, and very quickly the din of transit to the show-yard, the morning sun brightly shining on the passers-by, proved there would certainly be no lack of either cattle, implements, or poultry, and that the much-desired fine day appeared certain. Things progressed in this orderly and general manner until between ten and eleven, when, the band being summoned, the Committee and Judges walked down to the Exhibition, the band playing right lustily all the distance. This plan drew together a multitude of visitors, and on their arrival all who chose to give the higher rate of entry were at once admitted. Open judging, as it is sometimes called, was therefore the only course that could be pursued in the immediate presence of owners, the most anxious as being the most interested. Our own opinion, that Judges should in all cases conclude their arbitrations before the public are present, is well known; and very little extra trouble is by this plan entailed. It is quite worthy the attention of those societies which have not as yet adopted it. The poultry were arranged, as on all previous Shows, in one single tier in the open field; and, on first entering, so capital a collection proved very imposing.

Cochin-China fowls of any feather formed the two first classes. In the adults Captain Heaton's well-known Part-ridge-coloured pen, and in the chickens their capital Buff ones readily walked away from all competition; in fact, the Captain secured both at first glance. For the second prizes in these classes a good struggle ensued. It must be well remembered *Cochin* fowls must never be shown with irregular combs, a general defect throughout the whole of these classes at Keighley save the winners of the two highest premiums. The *Spanish* were good, but not exhibited in good feather.

We now come to the best classes we have seen for many years past, the five varieties of *Hamburgs*, for of Black ones, for which prizes were duly allotted, no less a number than seventeen pens were entered. These latter were all so good that truly it appears the Black *Hamburgs* now well deserve a class to themselves. These fowls are really a useful description of poultry, they are very far harder than most breeds, lay large-sized eggs and that frequently, and are unquestionably in good place as table fowls. In Silver-pencilled and Silver-spangled *Hamburgs* the classes were pre-eminently good. All the best known breeders of *Hamburgs* having entered the lists, it ceases to be a wonder that the greatest amount of anxiety was manifested as to the results, and a reference to the annexed prize list will prove that none of these prizes were of easy attainment.

The Grey *Dorkings* were, without doubt, the superior class through; but we much regretted to find a well-known exhibitor showing a cock so rumpy that it was equally offensive to the eye as the nostrils, even at some yards distance from the pen. This bird should by all means have been returned to its owner without any delay whatever, but some circumstance or other prevented it. It was the worst case of rump that has been seen at any show for years past. To send birds thus afflicted is absolutely an injustice to others, as this complaint is most infectious.

The *Game* were not equal to expectations, and fell far short of holding their particular classes with the credit due to the Show generally.

In *Geese*, *Ducks*, and *Pigeons* Keighley Show stood most creditably.

The extra class for new varieties of fowls was also well filled. In this class a sad ill-luck attended the exhibition of one pen of first-rate *White Polands*, which, of late, are becoming a far greater rarity than in years back. The cock-reel, as soon as it was penned, flew up against the top, and fell so prostrate as never to be able to stand afterwards from concussion of the brain. Although so materially injured, the quality of this pen was so good as to elicit a high commendation. Though not probable we trust its recovery is

not impossible. The Poland exhibitors, with Mr. Dixon, of Bradford, at their head, showed the most creditable collection seen for a long time back of every known variety. These added very much to the credit of the Keighley Show, for, when good, they invariably gain the best attention of the public eye from their combined beauty and singularity.

COCHIN-CHINA.—First, Capt. Heaton, Lower Broughton. Second, J. Firth, Halifax. Highly Commended, J. G. Sugden, Eastwood House. *CHICKENS*.—First, Capt. Heaton. Second, E. Smith, Middleton. Highly Commended, S. Shaw, Stainland; M. Mahoney, Golt Stock, Bingley.

SPANISH.—First, E. Beldon, Gilstead. Second, J. Dixon, Bradford.

CHICKENS.—First, S. Robson, Brotherton. Second, J. Siddie, Halifax. Commended, E. Beldon.

CHITTERRAT.—First and Second, E. Beldon, Gilstead. Commended, J. Dixon, Bradford; A. Houghton, Mickethwaite. *CHICKENS*.—First and Second, J. Dixon. Highly Commended, T. C. Midgley; E. Hutton, Pudsey. Commended, W. Balfour, Bingley; S. Shaw, Stainland.

PHEASANT (Golden).—First, E. Beldon, Gilstead. Second, J. Newton, Silsden. Highly Commended, J. Dixon, Bradford. *CHICKENS*.—First, J. Ellis, Kirkgate, Leeds. Second, J. G. Sugden, Eastwood House. Highly Commended, J. Dixon; R. Kaylor, Braithwaite; A. Brag, Holmfirth. Commended, E. Beldon.

HAMBURG (Golden-pencilled).—First, S. Smith, Northwram. Second, J. Dixon, Bradford. Highly Commended, E. Beldon. *CHICKENS*.—First, E. Beldon. Second, S. Smith. Highly Commended, S. Shaw, Stainland; R. Hemingway, Shelf. Commended, J. Dixon; J. Binna, Keighley; F. Taylor, Laycock.

PHEASANT (Silver).—First, E. Beldon, Gilstead. Second, J. Dixon, Bradford. Highly Commended, E. Beldon; J. Thompson, Silsden. *CHICKENS*.—First, A. Brag, Holmfirth. Second, J. Fielding, New Church. Highly Commended, W. Smith, Kildwick; E. Beldon; J. Dixon; S. Shaw, Stainland. Commended, T. Hanson, Thwaites; W. Bastow, Bingley; J. Richmond, Bingley; W. Sagar, Saltair.

PHEASANT (Black).—First, E. Beldon, Gilstead. Second, J. Dixon, Bradford. *CHICKENS*.—First, J. Dixon. Second, S. Shaw, Stainland. Highly Commended, E. Hutton, Pudsey. Commended, J. Dixon; J. Tempest, Haworth; E. Beldon; J. Smith.

POLAND PHEASANT (Gold or Silver).—First and Second, J. Dixon, Bradford. Highly Commended, E. Beldon, Gilstead. *CHICKENS*.—First, W. Newsholme, Bingley. Second, J. Dixon. Highly Commended, J. Dixon.

DORKING.—First, E. Smith, Middleton. Second, J. Dixon, Bradford. *CHICKENS*.—First, T. E. Kell, Wetherby. Second, F. Key, Beverley. Highly Commended, E. Leach, Rochdale; W. Newsholme, Bingley. Commended, G. Greaves, Pool.

GAME (Red).—First, J. Firth, Halifax. Second, W. Bentley, Scholes, Cleckheaton. Commended, J. Sunderland, jun., Coley Hall. *CHICKENS*.—First, H. Snowden, Great Horton. Second, E. Beldon, Gilstead. Highly Commended, R. Hemingway, Shelf. Commended, T. Dyson, Halifax; T. Spencer, Haworth; J. Firth, Halifax.

GAME (Any other variety).—First, E. Beldon, Gilstead. Second, J. Sunderland, jun., Coley Hall. *CHICKENS*.—First, J. Firth, Halifax. Second, J. Hanson, Shelf.

GAME BANTAM (Black or White).—First, J. G. Sugden, Eastwood House. Second, E. Beldon, Gilstead. Commended, J. Dixon, Bradford; S. Schofield, Heckmondwike. *CHICKENS*.—First, S. Schofield. Second, J. Dixon. Highly Commended, E. Hutton, Pudsey. Commended, E. Hutton.

ANY DISTINCT BREED.—First, J. Smith, Keighley (Black Poland). Second, J. Dixon, Bradford (Malays). Highly Commended, E. Beldon, Gilstead (Black Poland). Commended, J. Dixon (Black Poland). *CHICKENS*.—First, J. Smith (Black Poland). Second, E. Leach, Rochdale (Dark Brahmas). Highly Commended, J. Shackleton, Laycock (White Poland); J. Dixon (Black Poland). Commended, J. Pares, Childown Hall (Brahmas).

DUCK (Rouen).—First, S. Shaw, Stainland. Second, J. Dixon, Bradford. Commended, S. Shaw; E. Leach, Rochdale.

DUCK (Aylesbury).—First, E. Leach, Rochdale. Second, F. M. Hindle.

DUCKS (Black Indian).—First and Second, J. Dixon, Bradford. Highly Commended, S. Shaw, Stainland. *Ducklings*.—First, S. Shaw. Second, T. E. Kell, Wetherby. Commended, J. G. Sugden, Eastwood House; J. Dixon; T. Spencer, Haworth.

GESE.—First, J. Dixon, Bradford. Second, T. Briggs, Guard House.

TURKEYS.—Second, J. Dixon, Bradford. First, Withheld.

MR. MANOAR RHODE'S PRIZE.—Silver Cup, J. Dixon, Bradford. Highly Commended, J. Fielding, Manchester; S. Shaw, Stainland.

PIGEONS—Pouters or Croppers.—First, S. Robson, Brotherton. Second, E. Beldon, Gilstead. *Hen*.—First, S. Robson. Second, S. Shaw, Stainland.

Carriers.—First, W. Smith, Skipton. Second, S. Shaw. Highly Commended, E. Beldon; S. Robson. *Hen*.—First, E. Beldon. Second, J. Thompson, Bingley. Highly Commended, S. Shaw. *Almond Tumblers*.—First, E. Beldon. Second, S. Shaw. *Balds, Beards, or Mottled Tumblers*.—First and Second, S. Shaw. *Owls*.—First and Second, E. Beldon. Highly Commended, H. Shuttleworth, Skipton. *Turbits*.—First and Second, S. Shaw. *Jacobins*.—First and Second, S. Shaw. *Fantails*.—First and Second, E. Beldon. *Barbs*.—First, S. Shaw. Second, E. Beldon. Highly Commended, W. Smith, Skipton. *Dragons*.—First and Second, J. Wadsworth, Halifax. Highly Commended, J. Laycock, Keighley; J. Thompson. *Trumpeters*.—First, E. Beldon. Second, S. Robson. Commended, S. Shaw. *Maggies*.—First and Second, S. Shaw. Commended, J. Wade, Leeds. *Archangels*.—First, S. Shaw. Second, J. Thompson. Highly Commended, J. Thompson. *Any other breed*.—First, E. Beldon (Nuns). Second, S. Shaw (Spots). Highly Commended, J. Thompson (Swallows); S. Shaw (Swallows); J. Wade (Silver Runts).

RABBITS—Long-Eared.—Prize, J. Sunderland, jun., Coley Hall. *Any other kind*.—First, C. Hodgson, Keighley. Second, J. Reedy, Keighley.

The Arbitrators for poultry were Mr. Edward Hewitt, of Sparkbrook, near Birmingham; and Mr. Thompson, of Bradford, Yorkshire.

CRYSTAL PALACE POULTRY SHOW.—By the time this paper is in the hands of our readers it will want but one month to the

Crystal Palace Show. It is time the entries were made. We hope amateurs from all parts of England will support this our London Show, and that the Exhibition will be worthy of the locality. It must be borne in mind this is instead of the winter Show. The time is altered to insure finer weather and longer days than in December; also to allow birds to be shown both at Birmingham and this place without injury to themselves or inconvenience to their owners.

THE SQUIRREL.

THIS pretty little animal is classed by naturalists among the Rodentia, or gnawing animals, on account of its teeth; the front ones being formed, like those of the rabbit or rat, for cutting or gnawing, while the hinder ones are adapted for grinding. In a wild state Squirrels feed on nuts, acorns, beechmast, and the seeds of coniferous and other trees. Thus autumn and early winter are their times of plenty, and it is a question on what they feed when their favourite food becomes scarce, as it must do in spring. Probably they eke out their scanty store with bark, buds, and tender shoots until the birds begin to lay, when a plentiful repast is offered to them in the form of eggs and young birds, of which, no doubt, they destroy a great many.

The Squirrel's nest, or more correctly the dray, is a rather large structure composed of moss, &c., and not unfrequently having for its foundation the old nest of a Wood Pigeon or some other bird: it is domed over and has two openings. I believe they usually have two young at a birth, which, when tolerably grown, may be taken and reared by hand, when they become very tame and amusing pets. The best plan I know of is to suckle them on new milk by means of a phial, with a duck or other small quill put through the cork for them to suck through. The phial of milk may stand in a basin of hot water till the milk is blood warm. Great care must be taken that they have no sour milk, and that they are kept warm, particularly at night, or they will not thrive.

The best cages I know of are those usually made with the centre like a large wheel that revolves, and having a compartment at each end, the one to be filled with moss or soft hay for the dormitory; the other provided with a pan for bread and milk, and to be used as a feeding-room and for other necessary purposes. It should be provided with a sliding bottom, to be sanded or covered with some absorbent substance so as to be easily cleaned. Some persons object to these revolving cages as suggestive of the treadmill; but in reality they afford the confined Squirrel an unbounded field for exercise, which to such a naturally active animal must be very conducive to health. I know of no other form of cage that could give the same amount of exercise in one continued and uninterrupted burst. The only objection I can see to the revolving-wheel cage is where two Squirrels are kept together, that one attempting to pass while the other is spinning the wheel it is liable to be hurt; but for one Squirrel I consider this the best form. Such cages are commonly to be purchased at most of the London cage-makers or in almost all large towns; the price I do not know.

The food I would advise for a Squirrel in confinement should be a little sopped bread and milk, corn, and nuts; but if any one having greater experience in keeping Squirrels can advise a more wholesome diet I hope he will do so.

I find pet Squirrels are very tender, and usually come to an untimely end—I mean such as are brought up tame, and consequently are often indulged with a run about the rooms. Their active habits prompt them to climb almost everything and everywhere, while smooth-planed doors, polished furniture, and curtain-poles do not offer the secure footing which the rough bark of trees does, and consequently the pet Squirrel in his gambols often meets with a fatal fall, to the great grief of an admiring circle of friends.—B. P. BRENT.

FRAME-HIVES.

I SHOULD like to trespass on your space and ask your esteemed correspondent, "B. & W.," a question or two.

I intend to adopt in my apiary either Mr. Woodbury's frame-hives, or his thirteen-inch bar-boxes; I can hardly

make up my mind which. I want a frame-hive, but my bee-house and hive-covers are too small for the 14½-inch hive, and I want to retain them, as otherwise they answer very well.

"B. & W." says the single advantage of frames is the facility they afford for moving the combs without crushing a single bee, and the ease with which operations can be performed. I would ask him what he thinks about a plan I am almost determined to adopt to suit my case, and that is to fasten pieces of perforated zinc three-quarters of an inch wide, and long enough to reach to the bottom of the hive, to the ends of my bars, and so adjust them as to hang a quarter of an inch from the sides of the hive, affording the bees space to pass between them and the hive. This would prevent the combs being attached to the hive itself, and would give me, unless I misjudge, the "single advantage" of frames, with the advantage of a hive taking less room than when a full frame is used. With this half-frame, if I may call it, I would use thirteen-inch square hives, which happens to be the extreme size I can conveniently adopt.

Or would "B. & W." object to the adoption of thirteen-inch square hives 10 inches deep as an alternative with the above, with full frames?

Will Mr. Woodbury, or "B. & W.," say if they would ever resort to driving bar or frame-hives? If they would drive them, could it be effected by removing the crown-board and driving upwards?—A. B. C.

[I cannot imagine any circumstances under which it would become necessary to drive bees in a frame-hive; but I doubt not that they could be driven upwards. "A. B. C." had better enlarge his thirteen-inch boxes by deepening them to 11 inches inside, and use complete frames rather than resort to the contrivance he has described.—A DEVONSHIRE BEE-KEEPER.]

INTRODUCING SEALED COMB INTO A STRANGE HIVE—COMB FALLING.

CAN you tell me where to procure a Ligurian queen bee? We are told in books after driving a hive, if brood is in the combs and you give them immediately to another hive, they will hatch it out and thereby strengthen a hive. My first experiment in driving a hive succeeded in less than ten minutes. I found the driven hive with beautiful new clean comb partly filled with sealed brood, which I instantly placed on the top of a box-hive under a bell-glass, which I covered with a straw hive. Next morning, instead of hatching, the bees were working busily at removing all the brood. I left the comb for several hours, and then, thinking the bees were only wasting their time, I removed it and examined the brood, and it appeared perfectly healthy in different stages, but only one bee hatched whilst I was looking at it after placing it under the bell-glass.

Can you also remove another difficulty? Last year I bought a Woodbury bar-hive, and wishing to take out two bars of honey in the beginning of this month, I found I had first to cut away the comb from each side of the hive where it was attached and then the weight of the honey broke it away from the bar, so the only way was to lift the hive and let the comb drop through on to a dish.

I have had frames made to put in instead of merely the bars, and how am I to proceed with the remainder of the bars? as next year I am looking forward to experiments in making some artificial swarms, having mastered driving and uniting; but if the combs all break off the bars what am I to do?—A LADY BEE-KEEPER.

[Mr. Woodbury having ceased to send out queens and confined his attention to the multiplication of Ligurian stocks, we do not know where the former are to be procured. Bees will usually hatch out sealed brood under the circumstances you describe. If you had attached the combs to bars and placed them in an inhabited hive, they would certainly have done so. The accident of a heavy side-comb falling from its bar might have happened to any one, but a novice would be especially liable to it. By carefully severing the side attachments, and a little more skill in manipulation, you may avoid it in future. A Woodbury bar-hive is too small for the reception of frames. It should have been enlarged to 14½ inches inside from front to back, and would then take nine frames of the usual size.]

PARTHENOGENESIS—BEE SUPERSTITIONS.

THANKS to our chief for his reply respecting the age of a queen. Let all writers on the subject of bees and bee-keeping refrain from giving "pokes in the side," and, doubtless, amongst us we shall arrive the sooner at the true history and nature of the honey bee. If the history of the honey bee, as given by one of the Hunters (surgeons), in his medical works were published piecemeal during the winter months it might prove acceptable to the fraternity. I think his account of their habits is as near the truth as any I ever read.

I do not myself quite accept parthenogenesis as a fact, neither do I believe in the great longevity of the queen. If "I am slow to believe," I trust all the brethren will forgive me that wrong, and honour him the more who in convincing me proves the truth we are all aiming to know. I was not surprised at the announcement of the two queens at one time at large in a hive, I had long suspected it might be so. When a hive is in a flourishing condition, the inmates work, I have little doubt, by certain rules. Adverse seasons, accidents by flood and field disarrange the system, and hence bee-masters are led to jump at false conclusions. I imagine queen bees are turned off from the hive when they are useless, just as drones and neuters are. What becomes of them I have not the least idea. Sometimes you may find a young queen bee dead before a hive, sometimes a few drones and workers, but not always. I had a hive this year fuller of drones than usual (owing to my having given them too much drone-comb), not one of the many thousands in it are now to be accounted of. If they drop in their flight away from the hives, why do we not meet with them in their travels, falling on our aristocratic noses as we turn them up to the skies? My parish is full of hives from one end to the other, and I never stumble upon a dead bee of any sex, unless it be a few within a few yards of an apiary. Still confessedly they vanish, and that speedily too. For a short time, therefore, I think it probable an old worn-out queen and the princess regent may exist and be found in a hive; but experience says not for long. The old queen will go where her subjects, and "the good niggers in due time go." Perhaps to fairy land, or Jonas Jackson may tell us where. By-the-way, it is a shame to laugh and joke too much, even at the surmises of Jonas Jackson. I can tell him for his comfort, that I once lived in a village where every bee-master was more or less imbued with the superstition anent the death to bees when their owners have died. Need I say I combated the opinion on every occasion as in duty bound? Nay, I even accepted a hive in the winter (heavy and full of bees), belonging to a lord just dead in order to prove the fallacy of the superstition. I made it known all round my parish and asked all the bee-masters to witness the result, and my mouth was shut for ever after—for, alas! the hive did no more good and died in the spring. I am not superstitious, believe me, but I have known other instances and been told of many more where similar results have followed.

With reference to honeydew or falls, I once had a hive in Yorkshire whose inhabitants gathered and stored honey on or about the 10th August, when my other hives had gone to the moors. I lived in Yorkshire as a bee-master upwards of fifteen years, and I never knew of honey gathered, except on the moors, after the second week in July. That honey was dark, and I found bees working on the oak leaves at the time. The gathering lasted about three days. I was told that previous to my living in the village a similar case had happened, when a hive left at home did more good than others sent to the moors.

If the "DEVONSHIRE BEE-KEEPER" will observe for the future, he will find the truth of my surmise, that it is no use (at least late in the summer), to return bees from a removed super. They would have no place in the hive, no work to do, their occupation would be gone, and the cry would speedily arise, "Away with them!" They would not be killed like robbers from another hive, but they would be driven off as useless.—A HAMPSHIRE BEE-KEEPER.

If "A HAMPSHIRE BEE-KEEPER" will refer to my articles Nos. 25 and 30 of THE JOURNAL OF HORTICULTURE, he will see the evidence upon which parthenogenesis rests. It really amounts to absolute demonstration, and it appears to me perfectly impossible to produce stronger evidence of its fact.

The practice of turning hives completely round when a corpse is carried out of the house is even now by no means obsolete in this county. I know an instance in which it was resorted to no longer ago than last winter; but, to the astonishment of the natives, even this operation did not prevent the bees dying of starvation in the absence of more substantial assistance after a very bad honey season. A friend of mine relates a laughable story of a hearse and mourning-coaches starting off at a terrific pace and leaving the astonished bearers with a heavy coffin on their shoulders and no hearse to deposit it in, owing to the bees not comprehending the necessity of this forced revolution, and resenting it by an attack on the unoffending horses.—A DEVONSHIRE BEE-KEEPER.]

OUR LETTER BOX.

CROSS-BRED FOWL (*Novice*).—The birds you mention as cross-bred can be shown in the class for "Any other new or distinct variety." It is especially intended for those that have no other place—i.e., that belong to none of those breeds for which separate prizes are offered. You can call them by any name you please; or you can describe the process by which they were produced.

DUBBING A BANTAM GAME COCK (*Idem*).—It should not be dubbed before it is six months old, and if it is older so much the better. If dubbed when younger the comb grows again, and necessitates a second operation. It should not be done while the bird is changing plumage, and it must not be done in frosty weather.

PULLETS LAYING (*Idem*).—The pullets began to lay because they were seven months old. The breed may have something to do with their now sitting. They will lay as well without a cock as with one, and they will become broody. But, of course, the eggs are clear.

DISTINGUISHING THE SEX IN YOUNG GEESSE (*Farmer's Wife*).—It is very difficult to distinguish between Goose and Gander, especially when they are young. Among many other methods, it is said that if the birds be put in a pen or any enclosed space and a dog be thrown in, the Geese will all withdraw, while the Gander extends his neck and pipes. Another is, that the sack or bag that hangs down between the legs of both sexes is double in the male, and single in the female. Again it is said the neck of a Gander is shorter and thicker than that of the Goose. If that be all put together a proper judgment may be sometimes arrived at, but not always. Close observations and examination are the only certain guides.

CHICKENS DYING SUDDENLY (*Lex*).—By some means or other your chickens got at something that is poisonous. One or two might do it, and it might be attributed to giddiness; but as that is not contagious, and as the disease seems to be the rule with your chickens, you must seek the cause in their diet.

FLOOR OF HEN-HOUSE (*Young Beginner*).—Cover the floor of your house with gravel, as well as your yard. Ashes are sharp and prickly to the feet of chickens, especially of heavy ones, and they can only walk on them with pain and often injury. This would make them disinclined for exertion, and the complaint you make might arise from the constant use of one or the other of the legs while the other rested.

PRIZES AT THE SHEFFIELD POULTRY SHOW.—I have been informed that some of the local exhibitors at the late Sheffield Show have had the prize money paid them. Can any of your readers say if this be true?—C. S.

PRIZES AT POCKINGTON.—(*Exhibitor*).—We cannot insert such a communication. General charges, and unsigned by the complainant's real name and address, are inadmissible.

POINTS IN PARTRIDGE COCHIN-CHINA PULLETS AND COCKERELS.—(*J. C.*). Light breasts and bodies are great faults in Grouse or Partridge Cochins, and fatal faults in competition. In these, as in all others, the combs should be straight. The cock should have a perfectly black breast; hackle and saddle, deep orange, with black stripe down each feather; black thighs and red wings. The hens should be grouse-coloured all over, with as little yellow tinge as possible. Both should have yellow legs, well feathered.

BASKETS FOR GESE AND TURKEYS.—(*J. G.*).—Open baskets are the lightest; but they are liable to the very serious objection that the tenants are then subject to the attacks of any one. Many a bird has arrived at a show fair, because he was sent in an open basket. Our belief is that, for a short journey of from two to four days, a round stout wicker-basket, covered with sack or strong cloth, is all that is required. It should be fastened round, with the exception of about one foot, which should have temporary ties that may be undone for the purpose of feeding on the road. They should be high enough to allow the birds to stand up.

BEGINNING BEE-KEEPING (*A Novice*).—You may remove your hive at once, but it should be done carefully so as to avoid injury to the combs, which ought to be heavy at this season. Tie it up in a coarse cloth of open texture (cheese-cloth), and have it carried steadily by hand. You may cover the old straw hive with a neat case, but do not attempt to transfer the bees to another hive. Buy "Bee-keeping for the Many," which will give you the information you require.

LONDON MARKETS.—SEPTEMBER 14.

POULTRY.

We have little change to note. There is a good but not a large supply of Partridges. Grouse remains scarce. There is little or no demand for poultry.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	2	0	2	6	Partridges	1	6	1	9
Smaller do	1	9	2	0	Grouse	3	0	3	6
Chickens	1	3	1	6	Rabbits	1	4	1	5
Geese	3	0	6	6	Wild do	0	8	0	9
Poultry	1	1	0	4	Pigeons	0	8	0	9

WEEKLY CALENDAR.

Day of Month.	Day of Week.	SEPTEMBER 22-28, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
22	Tu	Sun's declin. 0° 25' N.	Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	265
23	W	Boerhaave died, 1728. Bot.	66.9	46.1	56.5	18	47 45	58 45	19 3	46 0	9	7 11	266
24	Th	Genista pilosa flowers.	66.4	46.4	56.4	17	49 5	56 5	51 3	46 0	10	7 32	267
25	F	Grass of Parnassus flowers.	65.8	45.0	55.4	16	50 5	54 5	18 4	6 2	11	7 53	268
26	S	Bupleurum tenuissimum flowers.	65.6	44.0	54.8	17	52 5	52 5	44 4	28 3	12	8 14	269
27	Su	17 SUNDAY AFTER TRINITY.	65.2	44.5	54.3	18	53 5	50 5	7 5	48 4	13	8 34	270
28	M	Rudbeck (sen.) died, 1702. Bot.	65.2	41.1	55.1	22	55 5	47 5	33 5	8 6	14	8 55	271
			64.5	44.5	54.5	19	57 5	45 5	58 5	23 7	15	9 15	272

From observations taken near London during the last thirty-six years, the average day temperature of the week is 65.7°, and its night temperature 44.5°. The greatest heat was 82°, on the 25th, 1832; and the lowest cold, 26°, on the 26th, 1855. The greatest fall of rain was 1.68 inch.

HARDY AQUATICS.



ATER, when well displayed, is always acceptable in scenery of any kind, but more especially in ornamental gardening, and rockwork is generally considered to belong to it. Rockwork, however, in my estimation is no ornament to

water, for in nature rocks do not generally accompany inland waters. Though they often do so in mountain torrents, yet in lakes near them the ground partakes more of the character of a bog than of high ground where we generally look for rocks, and it cannot be denied that Nature is the best teacher, yet the aim of the gardener is mostly directed to bringing as large an amount of interest and beauty into as small a compass as possible. He cannot produce a natural effect in the compass of a few yards, but he may so diversify his subject as to bring a large amount of beauty into a limited compass, and if the area were extended, a natural effect, or an effective picture would be produced.

Now, my aim being to deal practically with the question, I will endeavour to treat of water under the forms in which it presents itself in gardens, and in giving a few hints, hope to benefit those in possession of streams, lakes, or pools of water, already in, or passing through their grounds. "But I have no water in my ground," I hear some one say, "and I like aquatics." For your benefit I will introduce a chapter on making and fitting up a basin or pool for the growth of aquatics.

The selection of a suitable position is the first step towards forming an aquarium, and that depends on the supply of water quite as much as on surrounding objects. Economy must govern us in selecting and carrying out the plan when the water is conveyed in pipes.

Any place not shaded from the sun will do for aquatics, though it is better if situated in a hollow, for then the expense of digging is less, and the designer may be enabled to throw up some rockwork over which the water can trickle in feeding the reservoir, or if the fall is great he may indulge in a fountain. Of course, any person can have a basin with a fountain in it, a pond accompanied by rockwork, or simply a pool according to his taste. It is not necessary even to have shade where there is rockwork, for there are numerous shrubs and alpine plants that are adapted for sunny situations; but when such plants as Ferns are desired, a certain amount of shade is required, which if placed so as to obscure the water will be detrimental to the growth of the aquatics. Aquatics require an unclouded sky, therefore shade is a disadvantage. The plants may grow in shade, but it is need-

less planting them under the shade of trees, and expecting them to flower. The situation, therefore, should be open; and as surrounding objects will in a great measure determine the manner in which that situation should be furnished or finished, I cannot do better than proceed with directions for forming an aquarium for the growth of plants.

If the aquarium is to be situated in the centre of a flower garden it should have a formal outline, and be large or small in proportion to the design. Little rockwork should be introduced in such a place, and if at all it should be low, and not wider than one-quarter the width of the water, extending all round; or if openings are left they should harmonise with the design of the beds, and be planted with plants of trailing habit that flower at the same time as those in the beds, with which their colours should harmonise. If a fountain be introduced it should be ornamental in design, and low, so as not to break the arrangement of the design. I consider a border of stone more ornamental than rockwork round an aquarium in such a situation, for then the plants can be better attended, and their peculiarities examined. In either case a walk of gravel one-fourth the width of the water should be made round it, unless the design be on grass, when a walk would be superfluous.

If the water is to be accompanied by rockwork the latter should be placed on the north side, the earth that comes out of the hole in forming the aquarium being raised into a mound there; or if it be desired to have a walk to the water on that side the earth may be piled up in two heaps, placing stones by the side of the proposed path to keep the soil up, and making the path narrow where it abuts on the water, and from that point abruptly widening outwards. If the walls of the path be 6 feet high adjoining the water, and the trunks of trees remarkable for their peculiar shapes be thrown across it, it would appear as if the aquarium were approached by a rustic arch or subterranean passage. In this passage Ferns would revel; and on the southern side, presuming it to be formed into a rockery, alpine would be charming, whilst the top of the rockery might be planted with Juniperus procumbens, Cotoneaster microphylla, &c., which would answer the twofold purpose of clothing the rockery as well as shielding the Ferns on the northern side from the burning rays of the sun. Massive lumps of stone are more effective than small ones, and more lasting than trunks of trees in forming the arch. Where any attempt is made to combine rockwork with water, both should be of an irregular shape, or if the water be regular in outline the rockwork should be equally so. If the outline of the rockwork were regular it would be bad taste to have water trickling down or over it, but highly ornamental if it were irregular. Fountains in like manner belong to the polished or regular outline, and should not be employed where irregularity predominates.

Probably the most simple form of aquarium is the pond with grass down to the water's edge, and in such plants grow quite as well as in more costly because elaborate sheets of water. But still water wherever it is in-

troduced should be made in conformity with the surrounding scenery. I have seen a fountain rise from a circular basin and throw water 80 feet into the air in the rustic part of a well-kept garden, and seen in the same place the front of the house disfigured, certainly not ornamented, by rockwork before it. Now, had the fountain changed places with the rockwork it would have been more in accordance with good taste. Fountains belong to polished scenery, and rockwork to the natural or rustic. A basin of water is not improved by anything rustic about it in ornamented ground, but a fountain improves the latter just because throwing water into the air is the result of art, and, consequently, does not appear in nature: therefore it would be unnatural to introduce a fountain in natural scenery.

With these preliminary remarks I will proceed to the construction of the aquarium, polished or natural, for all the difference between one and the other is in the outline and ornamentation. As a general rule, pools of water should be deepest in the middle, and gradually be made shallower as the side or edge is approached. It is not necessary to adhere strictly to this rule, though it is essential to have the water deeper or shallower in one place than another in order to afford facilities for growing as great a variety of plants as possible; yet in basins having a regular outline it is as well to have the basin deepest in the middle, or from 3 to 4 feet deep, and to let that depth prevail over half the width of the basin, and then to form the bottom into terraces as we approach the edge, rising from 3 to 2 feet, then to 1 foot, which should be the depth of the highest step or terrace. The steps should not be less than a foot wide, but as much wider as the width of the basin will allow. In digging out the basin it should be considered how the water is to be kept in. Lead is the most objectionable material, zinc is worse, and cement almost, if not quite as expensive, though the last is not so detrimental to the well-being of the plants as either of the former. I am persuaded nothing is so good as clay puddling, and to make it leak-proof it should not be less than 1 foot in thickness over the bottom, and to the height the water is expected to rise, which should be but a few inches below the level of the surrounding ground. The basin or pool should, therefore, be dug out 1 foot deeper and wider than the depth and size it is expected to have when completed. Very stiff clay is best for this purpose, and it should not be very wet, though it should be moist. Spread a thin layer of clay over the bottom, and ram this down with wooden rammers not more than 6 inches in diameter, rounded a little at the bottom, and made small at top so as to handle nicely, occasionally moistening the clay so as to make it work better, and having a bucket of water near in which the rammer is frequently to be dipped to prevent the clay sticking to it.

It is scarcely possible to ram the clay too hard, for unless the interstices be completely closed the water will find its way through. Add more clay and ram this down like the first, continuing to add more clay and to ram until the bottom is completely covered with well-wrought clay to the thickness of 1 foot. A gutter or pipe should be provided at the top to take away the superfluous water, and if a fountain is to be introduced the pipe should be brought into the basin below the surface of the water, but it should be so situated as to be handy for repairs, and not so that the basin would have to be pulled to pieces in order to repair the supply-pipe. It is not unusual to have a statue on a short or low pedestal with the water pouring from the mouth of a snake that has entwined its cold body round the breast and neck of the statue. In others, a basin supported by a column is provided for the water to fall into after it escapes from the jet, which, of course, is situated in the centre of the basin, which last has a furrowed edge, thereby causing the water to fall or drip from it in pearly drops into the pool beneath. I do not think water is at all improved in appearance because it issues from the mouth of a statue, nor consider it more ornamental from an elevated basin than when it proceeds from a jet on a level with the water. I rather incline to the opinion that it is more ornamental by no latter plan than by either of the former. In any case it is simply a matter of taste, for in ornaments of this kind taste varies quite as much as the designs. Still, I cannot forbear remarking that water issuing from the mouth of a serpent, the nostrils of a statue, or the mouth of an animal, is in con-

trast to good taste, and not in keeping with the quietude of the surrounding objects. If the jet be on a level with the surface of the water it will be necessary to fix the pipe firmly to something, or it will be liable to become displaced, besides trembling, owing to the pressure of the water, which hinders the water from being delivered steadily in one unbroken column.

A piece of masonry will best serve to secure the supply-pipe in a proper position, for it is easy to let or run lead into it to which the pipe may be soldered. The masonry should rest on the clay, more being put in to prevent its sinking deep into the clay, and so making a way for the water to escape. The clay should not be worked round the masonry, for the water would find its way down by the side of it, and so escape—that is, presuming the masonry to be fixed prior to the puddling. After the puddling has become dry, and it should be left a day or two to do so, and no cracks appearing, as there will be if it has not been rammed sufficiently, throw in as much soil as will cover the bottom 6 inches deep, lessening the quantity so that it will not be covered more than a couple of inches at the edge.

The soil may consist of bog earth, or where that cannot be had, peat one-fourth, rich and rather strong loam one-half, and one-fourth gravel. If, however, the clay has cracked, the rammers must be brought into requisition again, and the clay rammed still firmer, which being done quickly, as it ought to be, allow it to remain a day, and if it shows no disposition to crack put in the soil, and let in the water, taking care that it does not wash the soil down into the deepest part of the basin. Having filled it allow it to stand to see that it does not leak, trying the fountain if there be one.

With regard to the size of the jet, M. François says the diameter should be one-fourth that of the supply-pipe, and he estimates the height of the column of water thrown into the air to be "1 foot below the level of the source for every hundred yards distance." These calculations, however, must be taken with considerable reserve, for the bulk of water at the source has quite as much to do with the height the water is expected to rise. For small fountains where the pressure is not known it is an easy process to ascertain by means of a lead nozzle, the orifice or opening of which can readily be increased or diminished, the width of the opening best adapted to throw the highest and fullest jet of water the pressure is capable of throwing. The width of the basin is quite high enough for any water to be thrown.

This being done and working satisfactorily, the basin will require an edging of stone or some such material of an ornamental character; or an edging of green glass edging-tiles will answer as well as anything, and form an agreeable contrast with the whiteness of the water and grey of the surrounding gravel path. In case there is no fountain the pipe that supplies the basin should be carried in unseemly, for no beauty is gained by showing how the water is supplied. Beyond the above a basin needs no other ornaments except the plants, unless the bottom of the jet be considered improved by the raising of some rockwork round it. The idea, however, of water rising from a piled cone of stones is preposterous. Remember, I am writing of water in the midst of an artistic flower garden, where everything is art-supplied, and from which everything natural is excluded. For that reason a flower garden, where the corners of nature are rounded-off, should not contain anything of an irregular outline, or that, whatever it may be, will fail to harmonise.

I may observe that if the pressure be too great it can be lessened by the agency of a stop-tap let into the supply-pipe, so that it may be regulated to throw the water any height; and whilst providing for the conveyance of the water to the aquatic basin, see if a tap cannot be conveniently placed to which the gardener can fasten some india-rubber tubing, and so water the beds in as many minutes as it takes him hours to do with the watering-pot. The beauty of a garden is in proportion to the amount of sunshine in it, and it really is astonishing to see how fast wry faces disappear when these little conveniences are given to the gardener.—G. ABBEY.

(To be continued.)

MUSCAT HAMBURG GRAPE LOSING ITS FLAVOUR.—I have the Muscat Hamburg Grape worked on the Black Ham-

burgh and Canon Hall Muscat, both of which were full Muscat-flavoured when first ripe; but have now, through hanging, lost every particle of that flavour.

I should be glad to hear through the pages of THE JOURNAL OF HORTICULTURE if any one else has observed the same result? and if such is its habit I will certainly discard it, as it is already subject to shanking very much; and if it also loses its Muscat flavour it is comparatively valueless.—S. TAYLOR, Terrace Villa, Barbourne, Worcester.

CULTIVATION OF HEATHS.

WHEN I saw the name of Mr. J. Fairbairn at the head of an article on the cultivation of the Heath, I knew from his success as a cultivator of that genus that none could be better qualified to give information upon the subject. Mr. Fairbairn was a man who endeared himself to all who knew him, and members of our craft will always entertain a kindly recollection of him. As it is well known, he was a successful cultivator of Ericas, and knowing so well how to grow them he was not one likely to mislead others in describing the treatment of them.

But there are growers of this beautiful genus who differ materially on minor points of culture, although in the main there must be a certain similarity of treatment. For instance: good sandy peat or heath soil is necessary, and no one that I am aware of has succeeded in growing them without it. The difference is in the mode of preparing it, and some of the best growers have peculiar methods of their own in this respect. My object, however, is not to describe the practices of others, but to give my own, and if my remarks are found in any way useful that is all I desire.

A short time ago a correspondent drew a comparison between the cultivation of the Heath and the Fancy Geranium, and in the main appeared to conclude that there is more art in growing the latter well than the former. To a certain extent I perfectly agree with him, and believe that to grow a collection of Fancy Geraniums to perfection requires a degree of skill and nicety that is not easily acquired. But, then, a Fancy Geranium is a plant that can be easily grown if no particular point of excellence is desired; and supposing a gardener who knew very little of the treatment of either, were to undertake to grow a collection of, say, twenty good sorts of Fancy Geraniums, and as many good sorts of Heaths, I will answer for it, that while he might be able to keep the Geraniums alive for a long time, perhaps for years, it is more than probable that the Heaths would soon sicken and die. It is a fact, that while it is the work of a skilful cultivator to produce really good specimen Geraniums, yet Geraniums are grown in nearly every cottage window; but Heaths are rarely seen there at all; and if they do decorate windows, they are merely put there to serve the time while they are in flower, and afterwards are given into the hands of some one who knows how to manage them, and, in instances that I have known, merely to die, or at least to be so far injured that it would be no loss to throw them away at once.

This may not prove that the Heath is more difficult to cultivate than the Geranium, but it shows that the Heath requires a mode of treatment peculiar to itself; and even if the rudiments of that treatment are known, some further knowledge is required, and also a peculiar handling, suggested by the habit of the plant, and acquired only by practice. This, however, is necessary in the cultivation of all plants, and should offer no discouragement in the attempt.

Happily, in this class of plants, as in others, there are species much more easy to cultivate, and which will stand a greater amount of rough treatment than others, and it is always advisable for beginners to ascertain which they are, and commence operations with them. *Erica gracilis* is a very useful sort for flowering in the autumn, winter, and spring; there being two sorts or varieties, one called autumnalis, the other vernalis. I have had the first in flower from October till February, and the latter from February till April. The flowers are small but come in abundance, and are of a bright pink colour, and highly ornamental at a time of the year when flowers are somewhat scarce. This sort I have found to be of the easiest cul-

ture, and also readily propagated, as it strikes very easily from cuttings, which cannot be said of some sorts. But more of propagation presently. *E. hiemalis* is another sort that I consider easy to grow, and a very pretty kind, but it does not last in bloom so long a time as *gracilis*. I have had it regularly in bloom from November until February, so that I may consider it truly a winter-flowering sort. *E. colorans* I have usually in bloom about the same time. It lasts in bloom rather longer than *hiemalis*, is more erect in habit, and not quite so free in growth. The flowers are nearly white at first, but change to a reddish-pink when past their best. *E. mammosa pallida* I have generally had in flower late in the autumn. *E. cerinthoides* has often flowered with me in the winter. *E. Willmoreana* is a spring-flowering sort, and a very strong grower. These are what I have found to be free growers, and such as I believe are suitable to begin with, supposing any one wished to begin cultivating Heaths. The treatment I have usually given them is very simple—merely cutting them down after flowering, and standing them out of doors in May, fully exposed to sun, wind, and rain, housing them in September, and giving them ordinary greenhouse treatment from that time until the beginning of May.

But this sort of treatment will not do for most kinds of Heaths. *E. cafra*, for instance, is a winter-flowering sort, at least so I have found it; but it is of a more delicate constitution, and will not stand the rough treatment described. *E. mutabilis* I have in bloom the whole year round; but this also requires careful management, but the treatment of these is the same as what is necessary for what I call the choice varieties; and as I intend to give the details of my own method of treating them, I will here merely remark that the time of flowering with certain varieties varies much, and that variation depends considerably on the treatment, but sometimes on the season. *E. fastigiata*, *E. lutescens*, and *E. Vernoni*, have flowered with me this season in March and April. The latter is now in full bloom, being the second flowering this season. *E. vestita coccinea* I have usually known to flower in the spring, but this season I have seen it flowering in August. This variation in the time of flowering frequently happens, but a good grower can generally keep them to the proper season. What I consider to be the better sorts of Heaths are mostly summer-flowering, and are often grown for exhibition; but at present I will merely name such as are my own favourites, and what I have had to deal with.

E. ampullacea major.—A compact-growing sort, flowers in July and August; the flowers of a light colour, changing to a reddish hue as they pass their best. This is a characteristic of several others, if not most light-coloured ones. *E. Cavendishii*.—A close compact grower of fine habit and foliage, with deep yellow flowers which open in May and June. This sort is a general favourite. *E. eximia*.—One of the very best; a close compact grower, first-rate habit, and exquisite in the form and colour of its flowers, and usually lasts in bloom a long time. Flowers in June and July. *E. Hartnelli*.—Flowers about the same time as the last; flowers fine and full, but not quite so full and free in habit as the above-named, but good for exhibition. *E. jasmijniflora alba*.—Rather free in habit; one of the best white ones. Flowers same time as last. *E. Massoni*.—This sort I like as well as any Heath grown, both from its habit of growth—the shoots always putting me in mind of the ascent of a rocket—and also on account of its fine flowers, which it produces in June and July. *E. metulastora bicolor*.—Another favourite, which, when well grown and flowered, is second to none for beauty; but it is not quite so profuse a bloomer as some—at least, so I have found it. Flowers in June and July. *E. retorta major*.—A most profuse bloomer, of excellent habit, compact, and free, hanging over the sides of the pot, and flowering at every point. June and July. *E. tricolor rubra*.—A good sort, as it shows up the flowers well; but rather spare than otherwise in habit. *E. tricolor Wilsoni*.—Good both in flowers and habit. These flower in June, July, and August, consequently are good sorts to grow for exhibition.

The above are known to Heath-growers as good sorts, and there are others equally good; but what I have named would be a good selection, though a small one; and it is always advisable to begin with a few, as before said. Those who have had little to do with this genus had better use a

little caution and begin with the strong-growing sorts, for, after a little practice with such, they will acquire a certain amount of confidence that may soon enable them to handle choicer kinds, it being a consideration that while a small plant of *gracilis* may be bought at a nursery for one shilling, a plant the same size of *Massoni* would most likely cost five shillings, perhaps more.

Most growers differ on several minor points of detail. Almost every Heath-grower has his own peculiar ways and opinions, and I will confess that I have mine; but then nothing suits me better than to learn the exact methods of other growers, so that, if I find their ways better than mine, I gladly adopt them. My object in penning these notes is simply with the idea that others may like to learn from my practice as much as I should like to learn from theirs. I will, therefore, give my experience in detail, and begin first with—

SOIL.—When in the neighbourhood of London I have used a peculiar kind of peat or heath soil such as I have not seen elsewhere. From what I can understand this came from a place in Kent, called, I believe, Shirley, but I am not sure. This peat, with the addition of a little more silver sand than it naturally contained, made a most perfect soil for Heaths, and they were sure to thrive in it; but then this peat may not be obtainable everywhere, so that we must do what we can with the best within reach. Peat earth of some kind it must be, but the more fibry the better—just the mere turf pared off, if possible—the tougher it is and the harder to chop up the better. But even fibry peat may not be at hand, and then, when it is for growing the choicer sorts of Heaths, great care is necessary; and I will just explain how I bring it into a condition that I can trust the roots of Heaths in it. I first chop it up with a spade, and then rub it through a sieve. This latter operation is not necessary, but I prefer doing it for the sake of the rougher fibre, which I consider an important ingredient in the drainage; but if white moss can be obtained that will answer the purpose, and the peat need not be sifted. Whether sifted or not sand must be added—I add about a third of silver sand. If silver sand is not to be had, drift sand or any other sand may be used; but it should be well washed of all earthy matter. The way I have done this is to nearly fill a pail or bucket with sand, fill up with water, stir well, pour off the water, add more, repeat the process until the water runs off clear, then dry the sand, and it is ready to be well incorporated with the peat. Peat itself without sand, or with very little, is a very unsuitable soil for putting any plant in. When wet it soon turns sour, and if it once becomes thoroughly dry, it is difficult to make it properly moist again. Plenty of sand mixed with it makes it both porous and absorbent. Any kind of well-washed sand will accomplish this object, and will do provided there is no pernicious quality in it. Silver sand, however, is best; and even if another kind of sand is used it is still advisable to mix some of this with the soil, since it is said that the Heath derives its silica from it: it, therefore, supplies an article of food. But, in addition to sand, I invariably mix with the peat a large quantity of broken pots. This I consider most useful, for it makes the soil still more porous and absorbent, and there is little chance of the soil becoming sour. The soil when ready for potting is about one-half peat, the other half equal portions of sand and broken pots.

POTTING requires a little care and skill, for much of the success depends on it; indeed, so much so that I can scarcely consider a plant under control unless I know how it has been potted. In the first place the pot should be thoroughly clean, and just dry enough to show no moisture on it. If too dry it is apt to absorb the moisture from the soil. The plant about to be potted should be just nicely moist, neither more nor less so than the soil to be used in potting. The pots should be neatly drained, and this does not depend on the quantity of drainage, but on its arrangement. I generally first put a crock over the hole, convex side upwards. I quite agree that it is a good plan to place it convex side downwards in order to keep worms out of the pot, but I never like placing Heaths where worms have a chance of getting in. Round this I place pieces rather smaller, and cover with crocks broken smaller still, but not fine, over this a thin layer of peat fibre, then a little soil. It is then ready for the plant which should be placed at the proper

height, simply taking care not to bury the collar and to leave room for water. I generally use a blunted stick to press the soil together, but take care that it is merely rendered solid and not hard.—F. CHITTY.

(To be continued.)

TREATMENT OF CYANOPHYLLUM MAGNIFICUM.

If I cut down a *Cyanophyllum magnificum* would it shoot again? or if I partially cut it down would it shoot out from the side, and become again a good plant? At present it is a magnificent plant, but too large for my stove. Although only bought about a year ago, and then about 1 foot high, it is now 3 feet 7 inches high; the large leaves are 13 inches wide and 29½ long. I should be glad also to be told how to propagate it, and at the same time to have a list of six new stove plants, and six ornamental-foliaged stove plants.—M. G.

[You have grown that *Cyanophyllum magnificum* with leaves 29½ inches long and 13 wide very well indeed. We should be loath to cut down so fine a plant, but as it is a necessity, could not you exchange for a young plant with some neighbour? It is a pity to cut it down, for this plant, although it stands cutting down, seldom makes a fine specimen afterwards. You can cut it down at your convenience, it will shoot again from the dormant eyes on the stem. It may be cut down to the lowest pair of eyes, or, to make sure, to the second pair or joint. It strikes pretty freely from cuttings. The tops of the shoots are best for striking—say with three joints. Take off the lowest pair of leaves, and cut the bottom transversely immediately below the lowest joint. Insert the cuttings singly in a No. 48-pot in sandy peat, leaf mould, and loam, with an equal quantity of silver sand intermixed. Plunge the pot, after gently watering, in a bottom heat of 85°, and cover with a bell-glass if the atmosphere be in the least dry. Keep the soil and the atmosphere moist for about six weeks, when the cuttings will be well rooted. This plant may also be propagated from eyes of the young and old wood like a Vine, inserting them half an inch below the surface, and placing in bottom heat and covering with a bell-glass as for cuttings.]

Of new plants let out, choose *Ixora crocata superba*, *Stenogaster concinna*, *Calliandra hæmatocephala*, *Gesnera pyramidalis*, *G. refulgens*, and *Hebeclinium atro-rubens*; of fine foliage, *Alocasia zebrina* and *Lowii*, *Pandanus elegantissimus*, *Hibiscus Cooperi*, *Theophrasta imperialis*, and *Campylobotrys refulgens*. If you wish for newer consult the reports of the various shows published in our pages, or visit some large nursery where you can choose for yourself.]

MELONS NOT COMING TO PERFECTION.

I HAVE for the last two years been very much troubled at my Melons not coming to perfection. I attribute this to the strong growth they make. I attempt to grow them in close brick pits, without the aid of hot-water pipes, by filling the pits with hot dung and leaves mixed together. I shake these materials well to pieces in order that the mass may heat regularly. After it has sunk I place some old turf, with the sward downwards, about 2 inches thick, all over the dung. On this I place about two bushels of a compost of fibry loam and old turf, &c., for the reception of the plants, which I plant out three in each hill. There is a hill to each light, each of which measures 24 square feet. After planting I water them with a little water with the chill off, and syringe them every afternoon with water of the same temperature as the air of the pits. I give as much air as is consistent with the culture of the Melon. They grow very fast, and a great deal too strong to do much good. They set their fruit very freely and swell until they attain the size of a cricket-ball or a trifle larger. By this time the vine or the stem just above the surface begins to show symptoms of decay. The plants then begin to die away by degrees, and ultimately the whole of the vine is withered up, leaving the fruit destitute of nourishment. I have grown the Melon with great success in some of the largest places in England and Scotland in pits heated by hot water,

and likewise on dung-beds; but what I want to know is if any one has been visited by the same evil? If so, I should like to know if he can suggest any preventive?—J. B. C. P.

[Your case is by no means a singular one, and from what you say it is evident that your Melons have been destroyed by canker at the root, or rather at the main stem of the plants just at the surface of the soil. This disease is easily detected by the enlarged corky-like appearance at the neck of the plants, and is most frequently attendant on a strong plethoric growth such as you describe your plants to have made. When the disease appears the best means of counteracting it is to thickly dust the affected part with quicklime; but this does not always prevent it. From what you say it strikes us that you grow your Melons in rather too light and turfy a soil, and that you water too frequently; and if you were to use a heavy rather clayey loam with no manure mixed with it, putting a good depth of soil in your frame, and treading it firmly together, and to apply water seldom but in greater quantity at a time, you would find that your Melons would not grow so rankly, and be less subject to go off as you describe. We have always found two or three good waterings sufficient to bring a crop of Melons to maturity when a good depth of heavy soil has been used, and under such circumstances they are less liable to canker.]

WELL HEAD.

(Concluded from page 213.)

In stepping out of the Orchid-house a fine plant of the Australian Pitcher-plant, *Cephalotus follicularis*, in the show-house again attracted my attention; and as Mr. Baynes is very fortunate in his treatment of this and many more rare and curious plants, and very liberal in imparting his knowledge, I will give the treatment he pursues so advantageously. *Cephalotus follicularis* delights in a humid atmosphere, and what may be termed a warm greenhouse temperature suits it exactly. It does best when in a small pot enclosed in a larger one, the interval filled up with sphagnum. The compost in which it is potted consists of sphagnum and fibry peat in equal parts, the main point being to provide good and perfect drainage. It is necessary to place the pot in a feeder of water, and to cover the plant with a glass fitting the inside of the outer pot if the house in which it is placed is at all dry, but not where the atmosphere is humid or very moist. The glass should be taken off and wiped occasionally, which prevents the plant being surrounded by stagnant air.

Without much time after leaving the Orchid-house to enjoy the pure air, we enter a vinery 30 feet by 18, with a half-span roof. The border is inside entirely, about 20 inches deep, and composed of the top spit of a pasture incorporated with about one-tenth charcoal and uncrushed bones. The house is well heated by four pipes along the front and two at the back, which permit of keeping up the temperature to the proper pitch without making the pipes very hot, and, what is better, air is admitted below them in front, whilst at the back the pipes are enclosed in a drain. In both cases no cold air can under any circumstances pass into the house without becoming heated. Ample provision is also made to let out the heated air at the top of the house.

The Vines are carrying half a dozen bunches each, this being the second season from planting. The sorts are Bowood Muscat, a very fine Grape, in my opinion the best of all Muscats; Black Hamburg, like sloes in colour; White and Charlesworth Tokay; Royal Muscadine; Champion Hamburg, a very fine even-berried buncher; and Muscat Hamburg, a very fine flavoured Grape, rich and vinous, with the peculiar flavour of the Muscat, but shanked; but I do not think outside planting has anything to do with that. The Frontignans shank quite as much planted inside as when planted outside, and so do many others. I am persuaded Frontignans shank through a deficiency in the component parts of the compost. Grizzly Frontignans were here the colour of badly-ripened Hamburgs, and were very fine indeed. In some pots were layers fed from the parent as well as the pot, carrying large bunches in proportion to the size of the pots, and although inadmissible for

exhibiting, they nevertheless form useful subjects for the dinner-table, where large fruit is preferable to that generally yielded from pots; the size and weight of the pot being a matter of some import also in matters of this kind.

In this house, too, were several *Amaryllises* and a great quantity of *Vallota purpurea*. Adjoining is a late vinery, rather in front of the other, which is identical with the other in every respect except the varieties, among which was Lady Downes, not only the best of all long-keeping Grapes, but as good as a Hamburg when ripe, and not like the Barbarossa and some others, which require to be turned into raisins before they are fit to eat. Golden Hamburg is not worth growing in my estimation, though Mr. Baynes has some very fine fruit upon his Vines. There were also Mill Hill Hamburg, Muscat Hamburg, and Trentham Black, well worthy of the name, as it is a very fine Grape though small in berry. The crops on these Vines are excellent and do great credit to the manager. In pots were some strong canes ripening their wood well.

The next house is approached by descending some steps, and is a Cucumber-house 27 feet by 15, which is heated by hot water for both top and bottom heat. In it I noticed some good fruit of Kirklee's Defiance, a free winter-fruited variety; Champion; and a sort of local repute, Robin Hood, which judging from appearance is a desirable variety. Here, too, were several seedling *Stephanotis* from floribunda with the midrib of the leaves red. I only remember having once seen the *Stephanotis* in fruit, but I never saw seedlings raised from it before. The seedlings are very promising. Let us hope they may give scarlet and blue flowers with the perfume of the parent.

Close to the last house is the Azalea-house, 27 feet by 15, in which are good plants of all the leading kinds and studded with bloom-buds. The plants are not large, but neatly trained in the shape of pyramids and bushes. For my part I prefer a moderate-sized specimen to one that takes up the space occupied by a dozen smaller plants. I can see more beauty in variety than sameness, and, consequently derive more pleasure from examining a dozen representatives of a genus than a huge plant whose beauties are seen at first sight. In this house were three new *Rhododendrons*—Princess Royal, Veitchi, and *Præcox superbum*; also *Centaurea ragusina*, more shining in colour than *C. argentea*.

A little further on are some of those useful appendages to every garden—cold pits; and in them were some things from which Mr. Beaton would have drawn some instructive conclusions, but I must be content to note them—viz., boxes containing seedling *Rhododendrons*, *Dalhousiae* crossed with *Broughtoni*, *Broughtoni* crossed with *Dalhousiae*, *Edgeworthi* crossed with *Broughtoni*, and *vice versa*; *Dalhousiae* with *Princess Victoria*, and *Dalhousiae* with *Edgeworthi*. The pits also contained some softwooded stuff—as *Cinerarias*, *Primulas*, &c.

Mr. Baynes showed me his boiler, which is Ormson's No. 5, heating ten compartments satisfactorily. It consumes about two tons of coke per week, does the work of ten saddle boilers, or twenty flues, presuming that mode of heating were adopted, and gives every satisfaction. Mr. Baynes is opposed to flues, and reckons them amongst the things of the past.

In journeying towards the other houses we meet with a large Tulip Tree, which is very fine, and appears to stand smoke well. The Yews, alas! are fast succumbing to the smoky atmosphere, which cuts off Conifers as frost does early blossoms. A bed of hardy *Statice* on the lawn is very pretty, and one often wonders that such plants are not more generally cultivated; and why everybody should pass over that fine old herbaceous plant, *Onosma tauricum*, the flowers of which rival any yellow *Calceolarias*, is, indeed, marvellous. Its propagation was said by a contemporary to be difficult, but Mr. Baynes strikes it by layers as freely as a *Carnation*.

But of the very many charms to be seen at this interesting place, none are more worth seeing than a plant of *Lapageria rosea*, which had fifty flowers expanded when I saw it (August 18th), and several green ones coming on. It occupies the northern half of the Heath-house, a small span-roofed structure 22 feet by 18, and is trained near to the glass. It is planted in what I will term a bed 4 feet long,

and 18 inches wide by 20 inches deep, with 20 inches of drainage below that. The soil is rough peat, with a liberal admixture of pieces of charcoal. It receives about four gallons of water daily, and is never subjected to any heat beyond that given to the Heaths and Epacris in winter, or about 45° on an average.

The Heaths and Epacris are now outside, but the house contained a good collection of Geraniums of the best sorts in flower, and amongst them I noticed a seedling of Mr. Baynes's much in the way of Wonderful, with large trusses and bold flowers, some trusses consisting of a dozen blooms. Although, perhaps, of no merit when under the eye of a florist, yet it is a very useful variety for conservatory decoration.

The greenhouse, a very old structure, is undergoing repairs, and the last vestige of flues in it is being swept away, buried where rubbish always was. It really is astonishing to see how good the woodwork of this house is, and the glass so clear, considering that it is about forty years old. The house is 24 feet by 15, and a lean-to.

Against the north wall a glass lean-to has been erected recently, which is to be devoted to the growth of Peaches, Nectarines, and Plums of the choicest kinds that can be had. The length of this house is 300 feet. The roof has a rapid fall or high pitch, short lights in front which open, and about 1 foot of the top opens also the entire length, these lights being shut or opened easily by levers and cranks. It has two four-inch pipes along the front, and the glass is put in in large squares. I understand the cost of a house of this description is about £1 per foot, exclusive of the pipes.

In the centre of the garden stands Mr. Waterhouse's observatory. He was formerly very partial to astronomical studies. He has kept a rain-gauge for nearly forty years, and is one of those who delight in seeing and enjoying an interesting garden, and whilst doing so is not backward in permitting others to view his, in proof of which I may state that his grounds were open to the visitors of the recent flower show at Halifax.

In conclusion, allow me to say that all I saw was very praiseworthy, and highly creditable to Mr. Baynes and his assistants, to whom I tender my hearty thanks for his cordiality, and not less his hospitality; and with a shake of the hand I bade farewell to him and left one of the most interesting gardens in the county of York.—G. A.

TRANSATLANTIC KITCHEN-GARDENING.

Not the least part of a true gardener's professional enjoyment is the pleasure (albeit plentifully seasoned with a due mixture of mental anxiety), of getting in his spring crops as safely and speedily as possible; and here where we are of necessity almost entirely confined to in-door operations from November till March, the change is all the more agreeable and exhilarating when we can put a spade in the ground, and have the earlier crops fairly under weigh. Spring, strictly speaking, is of very short duration here, as we are launched from the rigour of winter almost right into the heat of summer with very little intervening preparation. As an instance of the rapidity of the change, I find on reference to notes taken at the time, that on the 10th of April last year we had a heavy fall of snow with a corresponding temperature, and on the 18th of the same month (Good Friday), the thermometer indicated 88° in the shade, with a cloudless azure sky. This rapid change has, of course, a corresponding effect on vegetation, necessitates an energetic concentration both of head and hand work, and very speedily rubs off any rust that may have accumulated about the mental faculties during the long winter months. I was much struck with the truthfulness of a motto I can well remember reading in the rooms of the late Albert Smith, Piccadilly—viz., "Rubs make men and gems bright," from whence the inference may very readily be drawn, that as gardeners in pursuit of their legitimate calling meet occasionally with some pretty hard rubs, this may account in a great measure for the honourable position horticulture at present occupies, and for the superior intelligence that is to be found amongst those who devote their best energies to the elevation of the science of gardening; but at the same time it must be borne in mind, that there must be something of

the gem in the man to begin with, else no amount of rubbing will brighten up general opacity.

The gardeners of America exhibit a most praiseworthy perseverance and practical ingenuity in contending against and overcoming difficulties incidental to climatic extremes, with rapid and very often violent atmospheric changes; but most of those holding good situations here have learnt the rudiments at least of their profession, in some part of the British Isles. The old and oft-quoted adage, "That it never rains but it pours," though generally applied allegorically, is literally true here, for without any preparatory Scotch mist, down the water comes in torrents, often doing sad mischief, and leaving the ground when dried like well-baked pie-crust. In consequence of this feature, besides being the better practice under any circumstances, cropping is almost invariably done in rows, so as to admit of a liberal application of the Dutch hoe to break the crust.

As the ground is often frozen to the depth of 18 and 20 inches, very little kitchen-garden work can be done before the last week in March, and in late seasons not before the first week in April, when the first crop of Peas is sown. Of these, successions are sown up to the first week in June; after that time it is of little use to sow them, as they are almost sure to be destroyed by mildew; from the succession sown on the 7th of June last year, from this cause I could not pick a dish fit for table. Cauliflowers, with the exception of an early crop on a hotbed, are a very precarious vegetable, the hot weather generally coming in too soon for them, and if combined with a spell of dry weather causing a general inclination to "button," a most provoking consummation to a sanguine gardener's hopes. Young Beets are highly relished as a dish, and by a little management may be supplied from the 1st of May till November, when they are lifted and stowed away for winter use in the regular orthodox manner. The Bassano, Blood Turnip, and Henderson's Pine Apple Beet are the most useful varieties for summer; and the Long Blood Red for winter use. But the most indispensable vegetable in an American kitchen garden is the Tomato; and whether it is owing to the climate adapting the system to relish it, or the juices of the fruit being more highly perfected by a tropical temperature, I can testify from personal experience, that there is no more desirable addition to a repast during the continuance of the hot weather than the Tomato, and previous to coming to America I could not endure even the smell of them. They are highly relished both by rich and poor, are sent to table both raw and cooked, besides making excellent preserves and ketchup. The seed is sown in heat in February, and by the middle of May there are fine strong plants for planting out, which is done in rows 4 feet apart each way. They require very little more attention except keeping the ground clean, and a little judicious thinning if the plants grow too rank.

We have an improved substitute for the Windsor in the Lima Bean (substitutes are at a premium just now), and an excellent vegetable it is. Hills are prepared 4 feet apart each way, with a pole from 10 to 15 feet high in the centre of each, five or six Beans are then planted round the bottom of the pole about the middle of May, and in a short time this part of the garden looks like a miniature Hop field, for the Lima is a great runner—indeed, a gardening friend averred that were they supplied with a pole 50 feet high he believed they would reach the top of it by the end of the season; but this I cannot vouch for, nor is it desirable they should reach such an altitude, else the task of gathering a dish would be no sinecure. Should a cold rain occur just after planting, the Bean is almost sure to burst and rot in the ground, and as only one planting can be made, considerable judgment is required to get them evenly above ground.

Kidney or string Beans are also grown extensively, and in September and October last year, I had a fine crop grown from seed saved from the spring sowing—an instance of advantages sometimes to be derived from climate.

Sweet Corn must also be supplied daily from July to October, and forms a most agreeable addition to the dinner-table. This is an improved variety of the Indian Corn, and it is surprising how quickly it degenerates if a field of corn be in close proximity to that part of the garden where it is planted. Sweet Corn is generally planted in hills 3 feet apart, and successional crops being put in from May to July,

thinning out to three plants in each hill, and earthing-up as the plants grow strong enough; and it is better to strip off all superfluous side shoots, as it promotes the growth of the plant and the size and quality of the Corn. After a warm shower in June or July the Corn grows very rapidly, and when fully developed attains the height of 5 and 6 feet.

A large purple variety of the Egg-plant is another culinary curiosity. The seed is sown on a hotbed, or in an early graperly if that is available, in February, grown on in pots, then transplanted to the open ground by the end of May, in rows 3 feet apart, and by the end of August the fruit are ready for cooking.

Celery is sown in a favourable situation in rows in April, and then planted out in July, on the two-fold system of single rows, and a bed planted in rows; for this two-fold reason—the single rows are lifted by the end of October, carefully and tightly packed upright in trenches 3 feet deep, then covered over with leaves or straw for daily use throughout the winter, the bed being earthed over to the depth of 2 or 3 feet, and opened in early spring when that in the trenches has given out. The bed becomes, of course, one frozen mass, and the task of unearthing is, therefore, no easy one.

Pumpkins and Squashes are also grown in great variety; but the really useful sorts for a garden are limited to a few. Amongst Squashes, the Early White Bush for summer, and the Boston Marrow for fall use are the best. This can be planted with economical advantage betwixt the rows of Sweet Corn, and soon covers the ground when the Corn is cleared away. The Cheese Pumpkin, so called from its shape, is the most useful variety in its class, and can be used in various ways. From it is made the Pumpkin-pie so much and justly prized in every American household, likewise a first-class preserve, and last year I tasted an excellent jelly as clear as the finest White Currant, extracted from it by a neighbouring gardener's wife, so that British housewives may see that their American sisters are in no ways behindhand in this very useful department of domestic economy. The Mammoth Pumpkin is often grown to a great size, but is only fit to look at. There was one exhibited last year weighing 264 lbs., at the office of the "American Agriculturist," New York, where throughout the year there is generally some curiosity or monstrosity of the vegetable kingdom to be seen.

Melons are most admirably adapted to this climate, and do not require a tithe of the trouble requisite to their successful cultivation at home; but instead of one or two being sent in occasionally, they must be supplied in quantity every day during their season. They are divided into two distinct classes, Musk and Water Melons, each class having again its varieties more or less excellent. The Musk Melon has an entire cordate leaf, the well-netted fruit resembling the finer varieties of the Trentham Hybrids. The Water Melon has a more divided leaf, the fruit oblong-shaped, sometimes attaining the weight of 40 lbs.; size an indication of excellence; skin smooth and dark green, the edible part when fully ripe resembling frosted work of a deep pinkish colour, and most deliciously cool when the thermometer is over 90°, as it has been every day for the last three weeks, and seldom below 85° at night. Melons are sometimes sown in pots to forward them a little, but I question if anything is gained by this. The most generally adopted system is, to plant them in hills 7 feet apart in well-prepared ground, the hills being covered with small hand-lights until two or three rough leaves are formed, when the plants will thrive better by being uncovered. After this they only require a little thinning and stopping. From forty to fifty hills with—say, four plants in each, afford a good supply to a moderate-sized family.

Okra is sown in rows 4 feet apart, and is used when in a young state for making a peculiar kind of soup called "gombo."

Citrons are treated the same as Melons, and are extensively used as a preserve.

The Sweet Potato is sometimes grown here, but more for experiment than profit, as the cool evenings in the early fall are apt to prevent it from properly maturing; but it is a most delicious vegetable when properly cooked. An American Potato, the Peach-blossom, received very favourable notice at Kensington Gore last year, which it well merited;

besides other good qualities it is an excellent keeper through the winter.

A gardener here has many insidious and destructive enemies in the insect world to contend against, most vegetables and fruit having an insect peculiar to that variety, and some are favoured by the attentions of two or three. One of the most destructive is the Asparagus bug, which at one time threatened the total extirpation of that most useful vegetable; but a gentleman who deserves great credit for the ingenuity and simplicity of his device, has found out that by quartering a few hencoops on the Asparagus-beds and then letting the chickens run about at will they eagerly devour the insect and speedily clear the beds. I have not yet seen the least indication on the Apple trees of what we used to term "American blight," and Long Island has long been famous for its orchards of Newtown Pippins, of which there are abundant existing evidences, many of the trees being of a great age and yet in a good bearing condition. —DAVID FOULIS, New York, August 17.

[Mr. Foulis is now in partnership with Mr. Beattie, a nephew of Mr. Forbes, of Woburn, the firm being Beattie and Foulis, Seedsmen and Florists, 925, Broadway.—Eds. J. of H.]

BARR HALL,

THE SEAT OF SIR FRANCIS SCOTT.

A BABONIAL mansion situated on an elevated spot bears a commanding aspect, and may be seen afar off, but viewed from a distance the exposed appearance gives not the most pleasant ideas of comfort within. This cannot be said of Barr Hall and park, in Staffordshire, about six or seven miles from Birmingham, belonging to Sir Francis Scott. The Hall, neither elevated nor commanding, is scarcely seen until you are within a few hundred yards of it, yet when approached it appears to be all that a gentleman's country seat should be. It is certainly a beautiful building of square form, with a neat chapel on one side of it, the offices, &c., being at the rear. The grounds and park surrounding it are the most beautiful I ever saw, due both to the nature of the place, which is hilly and wooded, and the way in which it has been improved by art.

At the back of the house you ascend by winding paths into a thickly wooded region, beyond which you look over the country, which is in a high state of cultivation, being varied with corn fields and meadows, with here and there a wooded spot. From the front of the building the ground is beautifully undulating, and rather thickly wooded, and almost facing it, about a mile distant, is a church half hidden by the trees.

The approach to the house after passing the lodge is by a carriage drive of more than half a mile in length, apparently cut through a thick coppice, with a dense undergrowth of Brakes and Brambles. After a long drive you come to an ornamental piece of water of several hundred yards in length. This is crossed first by a rustic bridge of wood for foot passengers, and further on by a more massive bridge for vehicles. Following the carriage drive past the house, you arrive at the kitchen garden, which is walled-in, and another enclosed space containing the gardeners' residences, also the green-houses, vineries, &c., and beyond these is the orchard, and beyond that again the farms. But I did not inspect any of these very closely.

The pleasure grounds, properly so called, are situated in the space between the house and the ornamental water. From the front of the house a broad walk descends to the water's edge, across which on the opposite side is a boat-house, which you can see into, and at right angles with the house is another broad path and terrace lawn. Below these is another terrace, and below that again is another lawn reaching some distance on either side of the mansion. This is ornamented with beds of flowers in the modern style of bedding-out. The bedding-out here has been done with a view to the best effect. Looking at it from either side it is one of the most pleasing arrangements I have seen this season, there being sufficient space to take off that crowded and elaborate appearance often observable in the bedding system.

Thinking that a description of the bedding-out might prove interesting to some of your readers, I took down the arrangement, and give it as clearly as I can. On each side

of the broad walk leading down to the water is a bed in the form of the clover leaf. These were planted alike, the centre being a mass of *Cineraria maritima*, with Purple King *Verbena* round it, then Lord Raglan *Verbena*, with a broad edging of Variegated *Alyssum* or *Königa variegata*. Lower down is another pair of large circular beds, these were planted with a centre and four arms, reaching to the edges, of Alma variegated *Geranium*. The angles formed by these arms were filled first with Lord Raglan *Verbena*, next Purple King, and the hollow cones thus formed were filled with Variegated Mint kept very dwarf. Next, to the left, were four cones, with the hooked points meeting at the centre, which is a small circular bed of *Ageratum* and *Cerastium*. The first of these beds consisted of *Calceolaria Aurea floribunda*, with an edging composed of alternate plants of *Lobelia speciosa*, and *Königa variegata*, with which the whole four were edged, only No. 2 was planted with Lord Raglan *Verbena*; No. 3 with *Calceolaria amplexicaulis*; and No. 4 with *Defiance Verbena*; each cone being about 12 feet by 6. A little away from these was a group of eight triangular and two small circular beds. These were arranged in the form of two squares, there being four triangles and a small circular bed in the middle of each square. They were balanced evenly, two beds being of Mangles' Variegated *Geranium*, edged with blue *Lobelia*; two of Brilliant *Geranium*, with a like edging; two of Tom Thumb; and two of Trentham Rose *Geranium*, all edged with Variegated Mint. The two circles were *Ageratum mexicanum* and Variegated *Alyssum*. From these you pass to a square group of four acutely-pointed, triangular beds, like the others centered with a small circular bed, this being filled with a kind of single-flowered *Tropæolum* of a deep orange colour, edged with *Cerastium tomentosum*. The triangles were masses of Lord Raglan and General Simpson *Verbena* filling two beds. The other two were *Calceolaria amplexicaulis*. This kind retains a freshness which other *Calceolarias* seem to lose at times.

Passing on a little further you come to a large star planted in the centre with Flower of the Day and Alma *Geranium*. The eight radii are planted thus—the opposite ones being balanced—viz., two with Brilliant Variegated *Geranium*, two with Tom Thumb, two with Trentham Rose, and two with Christine *Geranium*.

Still further on were a series of scroll beds, all planted alike—that is, along the centre of each bed were alternate plants of *Calceolaria amplexicaulis*, *Ageratum*, and *Perilla*, and on each side of these a row of Tom Thumb *Geranium* bounded by a broad edging of blue *Lobelia*, and Variegated *Alyssum*, planted alternately, which style of mixing the plants has been freely adopted here, and as regards the effect produced with success, and certainly the scroll pattern and the arrangement of the colours elicited many remarks of approbation.

About this scroll pattern were scattered several small circular beds, filled with *Geraniums* of various colours, and all edged with *Cerastium*. Beyond these were a clump of *Rhododendrons*; and some shrubs and trees of dwarf habit, which terminated the flower garden in that direction, excepting that over the water were some vases filled with Scarlet *Geraniums*, fixed as it were on an unfinished bridge.

Going back to the broad walk leading down to the water, and passing from the beds that matched those already described, we come to a series of beds formed similar to the pine pattern of ladies' shawls. These are four in number, and raised above the level of the grass about 2 feet. The first is *Gazania splendens*, in opposition to one of *Calceolaria Aurea floribunda*, and one of a deep yellow *Tropæolum*, opposed to one of *Calceolaria Prince of Orange*. These four beds are centered with a circle filled with *Ageratum*, edged with Variegated Mint. To the left is a raised circular bed of Brilliant *Geranium*, edged with three rows of *Cerastium*, and to the right a cross, in the centre of which is a mass of Italian *Calceolaria*, the four parts being Pink Nosegay *Geranium*, Purple King *Verbena*, and Golden Chain *Geranium*.

A little way from this is a long border about 5 feet wide, planted in patches consisting of Golden Chain, Flower of the Day, and Alma *Geraniums*, alternating with Blue Bonnet and Lord Raglan *Verbena*, Variegated *Alyssum*, and *Lobelia speciosa*; the whole making up a display which if not grand excited a feeling of gratification and left

little to be wished for. It will be seen that the materials were few, and the colours far from being numerous; but I doubt if the effect would have been so good had a greater variety of subjects been used in the planting.

On each side of the upper terrace is a row of vases filled with Scarlet *Geraniums*, which, as any one may be sure, make a great improvement. Looking at this garden across the water, with the mansion, the adjoining chapel, and the rising ground on each side of it surmounted by thick woods for a background, it presented about as good a scene as could well be desired, and certainly the best that could be formed of the place. On the right is a pinetum, beyond this a park, and where the absence of trees allows the view to extend some distance, is a village spire peeping through the trees, and cattle browsing on the hills to the left.—F. CHITTY.

EDINBURGH HORTICULTURAL SOCIETY.

THE autumn Exhibition of flowers and fruit in connection with this Society was held on September 10th in the Music Hall, George Street. Taken as a whole, it was the most successful autumn meeting which has ever taken place under the auspices of the Edinburgh Horticultural Society; while there can be no doubt whatever as to its great superiority in fruit over any exhibition which has ever taken place in Edinburgh before. The quantity of fruit was far greater than the most sanguine could have expected; and the quality of the greater part of it, more particularly the Grapes, was very superior—so much so, that many who had seen the London shows were agreed that the Grapes brought forward on this occasion were in all respects better than those which have appeared at the shows of the southern capital.

While every dish of Grapes was excellent, the first-prize Muscats from Mr. Denholm, gardener to the Duke of Roxburghe, were wonderful examples of good culture. The size of both bunch and berry was enormous, and they were ripened and coloured to the very highest pitch of amber colour slightly mottled with russet spots—a degree of perfection most difficult to work up to. Those from Mr. McDonald, Cupar, Fife, which took the second prize, though not so large as the former and others in the Hall, were also beautifully ripened. Not less remarkable as examples of skilful Grape-growing were the Black Hamburgs with which Mr. Fowler, gardener to the Earl of Stair, Castle Kennedy, took the first prize. One of the bunches weighed 5 lbs. Mr. McDonald was second in this Class also with smaller but very well-finished bunches. For the best bunches of two sorts Mr. Fowler was deservedly placed first with a bunch of Snow's Muscat Hamburg weighing 3 lbs. 10 ozs., and a bunch of Trebbiano 4 lbs. 12 ozs. Mr. Laing, Pitcairle, Fife, made an excellent second in this class.

A most interesting collection of Grapes were sent for exhibition by Mr. Fowler, Castle Kennedy, consisting of magnificent bunches of Snow's Muscat Hamburg, one bunch of which was nearly 4 lbs., beautifully coloured, and large and equal in berry; Barbarossa, 5 lbs. 13 ozs.; Golden Hamburg, 3 lbs. 9 ozs.; Muscat, 4 lbs. 2 ozs.; White Nice, 4 lbs. 12 ozs.; and one or two more varieties equally fine. One variety, named Black Gibraltar, excited a deal of interest on account of the compactness of the bunch and the immense oval-shaped berries of a brownish-black colour. Mr. Fowler stated that this is a most valuable sort for long-keeping, and that it acquires a very fine flavour throughout the winter months. Even at the present time the flavour is very good, with a firm crackling flesh. There can be no doubt at all that this is a Grape well worthy of more extensive cultivation. The bunch exhibited weighed 3 lbs. 12 ozs. While these are referred to as the most striking examples of good management, there was scarcely an indifferent bunch of Grapes placed upon the tables, and the Judges had considerable difficulty in arriving at some of their decisions. There is one point in which the Edinburgh exhibitors are sadly deficient as compared with those of London, and that is in the matter of conveying their Grapes to the shows, and in many instances the bloom of the Grapes is almost entirely rubbed off in the carriage.

The prize offered by the proprietors of this Journal for the best collection of fruit was contested for with great

vigour, and while all the collections were a credit to any grower the prize ones were most superb; and this is but another instance of the amount of energy that liberal prizes call into play. Mr. Thomson, Dalkeith Park Gardens, was placed first with a most superb collection, consisting of an Enville Pine, Regent's Park Melon, and another named Dalkeith Netted Hybrid; Lady Downes' Grape, large, and as black as sloes; Muscats; Violette Hâtive and Bellegarde Peaches; Violette Hâtive Nectarines; Musa Cavendishii; Doyenné Boussoch, Beurré d'Arémborg, Reine des Poires, and Jargonelle Pears, all except the latter being from trees in pots and very fine; Moorpark Apricots; Goliath, Jefferson, and Magnum Bonum Plums; Apples, Cherries, Currants, and Gooseberries. Mr. Melville, Dalmeny Park, was second with Black and White Grapes, Pears, Apricots, four sorts of Plums, Peaches, Nectarines, Cherries, Figs, Melons, &c. This was also a very handsome collection of fruit. The third prize was awarded to Mr. Gordon, Niddry. Besides these there were other five competitors for this prize, and their collections were all very good.

Pine Apples were not numerous but well represented, particularly by Mr. Foulis, Fordel Gardens, who took the highest honours with an excellent Queen and Ripley Queen.

Melons were plentiful and good; Mr. Weir, of Kerse House, and Mr. Denholm, Broxmouth, being the successful competitors in the order in which they are named.

Peaches, Nectarines, Pears, Plums, Apples, &c., were in great abundance, and in more than usually fine condition.

In the cut flower department Hollyhock-spikes presented a very imposing array; and Dahlias, Verbenas, Asters, Marigolds, and Gladioli were exceedingly plentiful. Pot plants were the weakest point of the Exhibition, and there was nothing amongst them calling for special notice. Tables of plants were brought forward by the various nurserymen of Edinburgh, and several very tastefully-filled baskets of plants such as are suitable for sitting-room decoration.

SOME OF THE GARDENS WORTH SEEING.

WORCESTERSHIRE.

Name.	Proprietor.	Gardener.	Station.
Whitley Court.....	Earl Dudley and Ward.	Mr. Lauder.....	Stourport
Howell Hall.....	Baroness Windsor	Mr. Markham	Bromsgrove
Hanbury Hall.....	H. F. Vernon, Esq.	Mr. Elliott.....	Hanbury
Hazor House.....	Mrs. Galton.....	Mr. Dalrymple.....	Droitwich
Hindlip Hall.....	H. Allsopp, Esq.	Mr. Murdock.....	Fearnall Heath
Hartlebury Castle	Bishop of Worcester.....	Mr. McCallum.....	Hartlebury
Ombersley Court	Lord Sandys.....	Mr. Blake.....	Droitwich
Maddresfield Ct....	Earl Beauchamp.....	Mr. W. Cox.....	Great Malvern
Crown East Court	A. H. Roydes, Esq.	Mr. J. Cox.....	Worcester
Spetchley Park.....	E. Berkeley, Esq.	Mr. Taylor.....	Worcester
—S. T., Worcester.			

EAST LOTHIAN.

Archerfield.....	Hon. R.C. N. Hamilton.	Mr. D. Thomson.	Dirleton
Biel.....	Ditto.....	Mr. Gall.....	East Linton
Yester.....	Marquis of Tweeddale.	Mr. Shearer.....	Haddington
Tynningham.....	Earl of Haddington.....	Mr. Lees.....	East Linton
Broxmouth.....	Duke of Roxburghe.....	Mr. Denholm.....	Dunbar
Whittingham.....	Mr. Balfour.....	Mr. Rintoul.....	East Linton
Leachle.....	Sir H. Dalrymple.....	Mr. Whitelaw.....	North Berwick
Gosford.....	Earl of Wemyss.....	Mr. Mitchel.....	Longniddry

All these stations are on the North British Railway.—J. H.

GROWING PARSLEY FOR THE WINTER.

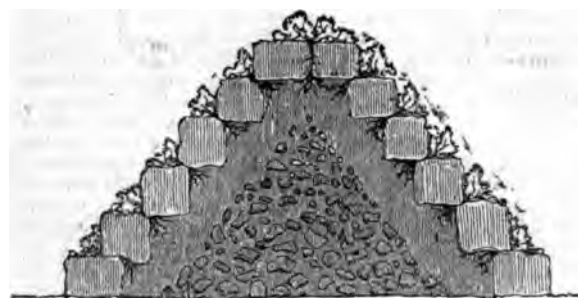
THE preservation of Parsley in a fresh and green state during the winter season is frequently attended with much difficulty where the convenience of frames is not available for this purpose. In the more northerly counties, indeed, Parsley is only to be procured at much expense during nearly six months out of the twelve. The leaves of this useful vegetable when grown in the open ground are generally destroyed by frost; but if the circumstances attending their destruction are fully considered, it will be found that the stems are most rapidly affected where the soil is stiff and moist, and where the situation is exposed to cold cutting winds. The plant, however, does not appear to be so delicately constituted but that it may be had with comparative ease all the year if the ordinary conditions of growing the less hardy plants during the winter are observed. Some varieties are, perhaps, more susceptible to cold than others.

The finest sample I ever saw was grown on the west coast of Scotland by a village schoolmaster. It was of a beautiful green colour, and of a remarkably vigorous habit; but growing in a low situation and exposed to cutting sea gales, the leaves always died down during winter.

In ordinary situations Parsley may be grown successfully on a border having a south aspect and protected from the north by a wall. The soil should be light and rich. A quantity of stones and brick rubbish should be laid at the bottom to the depth of 7 or 8 inches, so that the bed may be raised considerably above the general level of the ground, and thus insured against excessive moisture. The surface of the soil being properly raked, seed of the most curled variety that can be obtained should be sown very thinly, either in shallow drills or broadcast, and slightly covered with fine soil. This operation should be begun in May or early in June, and if the weather continues dry, frequent waterings will be necessary. The young plants will have sprung up in six or seven weeks, and when large enough they must be thinned-out to 4 or 5 inches apart. They will have become large and vigorous by the end of autumn, when a number of stakes should be driven into the ground along each side of the bed. These stakes should be of a thickness to permit of their being bent across and tied together so as to form a series of arches, and strong enough to support a covering of mats, which should be laid over them as soon as the weather becomes frosty and wet. During intense frost, especially at night, it may be necessary to increase this protection by doubling the mats; but these should be removed entirely while the weather is mild. The soil should be kept as dry as may be, and all decaying matter carefully removed from the plants. A bed $4\frac{1}{2}$ feet wide by 10 long will contain as many plants as may be sufficient for an ordinary supply during the winter.

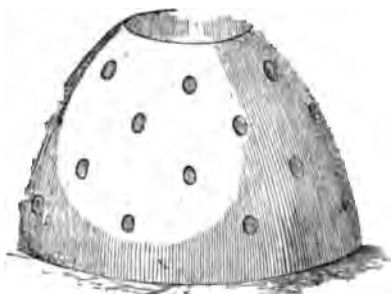
Parsley might also be grown on a sort of rockwork with great certainty and convenience, for on such a structure the roots and stems could be kept in that dry state which is so indispensable to their health and freshness in dull cold weather. For growing it in this way, it is recommended to sow a quantity of seed early in May in a bed of light rich soil on a south border. When the young plants are a little above the ground they should be thinned-out to 6 or 8 inches apart, kept clear of weeds and watered as occasion requires. At the end of August, or early in September, collect a few barrowloads of moderately large stones, selecting such as are best suited for forming a rockwork. They should be longer than broad, somewhat flat or even at the sides, so that they may lie firmly in their places when built up. Any kind of stones which the district may afford will do; but those of a sandy or porous composition should be preferred when a choice is offered. Bricks may also be used, but they are, perhaps, too flat, and do not present those holes and crevices which are desirable in the formation of rockwork, and which may generally be secured by the use of stones. The site being chosen in some sheltered open part of the garden, the stones and a quantity of good friable sandy loam, with some brick rubbish or rubble, should be collected together. The rockwork must be determined according to taste and requirements, in respect to form and size, but there is no use in having it too large. Perhaps the oval form is the most convenient for building such a structure, and if the base is 5 feet long, a pile may be raised with a surface extensive enough to grow a sufficient supply for an ordinary family. The stones used in forming the first tier or layer may be about 8 inches high and kept close together. A quantity of soil should be worked-in at the back and sides so as to keep them together, while the centre may be filled with ordinary brick or sandstone rubbish. When the first layer is completed a portion of the soil should be laid over the stones at the side, and a number of plants of Parsley, taken carefully up from the bed in which they have been growing, should be planted as regularly as possible in all the holes and crevices, their roots being spread out in the soil, and their stems and leaves kept inclined outwards at the margin. Having fixed the plants properly, proceed to erect a second tier in the same way, and so on with the others, till the pile is raised to the height desired; but with the subsequent tiers keep the stones 4 or 5 inches nearer the centre all round, and about an inch or so apart. Every stone should be placed directly

over the point which forms the junction of those immediately below it; and every additional tier which is raised must be kept 3 or 4 inches nearer the centre than the one preceding it, so that when the whole structure is completed an imaginary section of it would appear thus. In this



arrangement of the several tiers the plants will not come directly over another, and the soil will not be washed down from the interstices by rain. If at the time of building the rockwork the weather is dry, the soil about the plants must be well soaked with water; but this must be done by limited supplies repeated several times, for if much water is poured on at once, a portion of the soil will run down. To prevent the action of drenching rains from having the same effect, it will be necessary to provide the winter covering at once. A number of stout ash sticks must be driven into the ground about 12 inches from the bottom of the rockwork, and attached by a good strong cord, so near one another that they may form an open arching figure at the top, and so placed that at any point they may be 12 or 18 inches clear of the plants. A covering of oilcloth or common canvas should be provided and kept in readiness to protect the mound from heavy falls of rain until the soil has become consolidated round the sides. This covering will also be available during intense frost, when it must be carefully laid over the whole frame of sticks and removed whenever the weather is mild and open. In eight or nine weeks the pile will have become covered with strong healthy plants, which, besides affording a continual supply, will form an agreeable object both in summer and winter. It may be urged that by this plan of growing Parsley the roots are liable to become dry in summer; but in admitting the probability of such a circumstance, we must bear in mind that if the plants could be kept from growing too vigorously during the summer months, they would be in the best condition for preservation during frost. Now the drought of a hot summer would have the effect of retarding them, and conserving their energy until the time when their growth was most desirable. Besides, any extreme dryness could be very easily prevented by timely applications of water.

A Dutch method of growing Parsley during winter is to sow the seed in March, so that the plants may be vigorous enough for removal by the end of September, when they are planted in large pots, somewhat similar in form to what is used in England for blanching Sea-kale, or, perhaps, rather like the annexed figure. The vase is open



wards. This vase may be made to any size, and as ornamental as taste may determine.—(P. F. KEIR, *Gardeners' Magazine of Botany*.)

KEELE HALL.

THIS delightful residence of Ralph Sneyd, Esq., is beautifully situated on the brow of a hill, three miles from Stoke and five miles from Trentham. The whole neighbourhood might be searched before finding a more suitable position or one commanding richer and more varied views of the surrounding landscape. And yet, notwithstanding its elevation, so well is it sheltered and backed by timber, that though so near to Stoke and its potteries, and within two miles of Silverton and its mines, but for an occasional streaky cloud in the clear atmosphere, interesting and pleasing rather than otherwise (though giving some little idea of huge chimneys which you cannot see), you might imagine yourself to be ruralising amid the wild grandeur of a rich Arcadia. Of what may be denominated the principal approaches I cannot speak, as I had the privilege of going from Trentham; and after passing a rustic gate could not help admiring what some years hence will be a splendid avenue of Spanish Chestnuts, the ground rising all the way to the stables with a noble archway for an entrance, and passing through the square on to the mansion through a deep cut in the red sandstone, of a superior sort of which sandstone the fine stables and the still superior mansion are chiefly constructed.

There is always a little difficulty in settling on the best mode of describing a place, so as to make it interesting to the reader; but as the fame of Keele Hall consists chiefly in its horticultural productions so far as gardeners are concerned, and as Mr. Hill's compact and very commodious house abuts on the west side of the stables, the gardens of utility being immediately in front of it, and as to these our attention was first directed, we will just take our readers along the pathways we traversed. We may observe that the front of the house showed the presiding genius of Mrs. Hill in a few beautiful flower-beds, in one or two of which, as in a post of honour, was planted a pretty seedling *Verbena* of a rich crimson magenta colour, which, we think, from its dense habit deserves to be better known; and this again was flanked on a higher level by masses of *Picotees*, *Carnations*, and *Cloves*, some white seedlings of the latter being very fine. However enthusiastic a gardener may be, it is a sad drawback to him if there is no sympathy as to his favourite pursuits between him and his partner at home. You may always reckon surely on that sympathy where you see good plants or boxes in the windows and elegant flower-beds near the doorway. From what little I saw of the midland counties, owing to the incessant rains, I could only come to the conclusion that the gardeners in that district are highly favoured in this respect, and to it no doubt owe no little part of their great success.

The soil of the kitchen gardens, lower and upper, is composed of a rich stiffish red loam resting on the red sandstone. From the slope of the gardens we could scarcely suppose it possible to suffer from wet in a moist dripping season; whilst the depth of the soil and the cool sandstone beneath prevented anything suffering from such dry seasons as the present, as was amply evidenced in the heavy crops of Onions, Carrots, Cauliflower, and some of the finest late Peas I ever witnessed in the end of August. This lower garden is surrounded by a wall 12 feet in height. On the south aspect is a Peach-wall looking well; but Mr. Hill complained that unless in fine seasons they did not ripen kindly. There were iron rods from the top of the wall to 3 feet or so on the border, and they stand through the season for supporting the canvas used for protection; but Mr. Hill well said that a covering of glass for a quarter of the space would secure on an average more good fruit for the table. The south-west wall is occupied by Pear trees in a state of great fertility and luxuriance, and by grafting several sorts on some trees a good supply is afforded from August to April, beginning with *Citron des Carmes* and *Jargonelle*, and ending with *Easter Beurré* and *Beurré Rance*. In May, 1858, Mr. Hill had a certificate from the London Horticultural Society for the fruit of the latter. In general the

Pears on this wall are of large size, the *Beurré Rance* being frequently fully 1 lb. in weight. On the opposite side of the walk that bounds the borders of these fruit-walls is a narrow circular trellis (see *fig. 1*), chiefly devoted to Apple trees in good condition, and which trellis looks very neat. It is 2½ feet wide at the base, and 5 feet in height to the blunt circular apex. The crops were deficient this season, owing to the severe frost on the 20th and 21st of May.

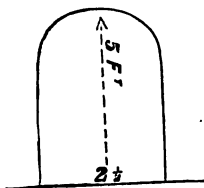


Fig. 1.

But passing these, general cropping, lots of hotbeds, and Asparagus-pits where the plants grow where they are to be forced, we come to the ranges of hothouses which have made Keele Hall garden and its superintendent so illustrious; Mr. Hill, in the course of nine or ten years, having taken about sixty first prizes for fruit at the metropolitan exhibitions. The very best of the fruit had been cut from the earlier houses; but sufficient remained in later ones and others ripening to show very superior management, and also to prove conclusively that the success was no haphazard affair—no happy result occurring from merely sticking a Vine into the ground and letting it take its chance of succeeding or failing, but the consequence of much thought and study as to the best modes of management and a constant unwearied attention to the smallest minutiae of practical details. Owing also to the combined liberality and the mechanical and artistic taste of the worthy proprietor, all the structures about the garden were in first-rate condition, and furnished with the best modern improvements as to ventilation, &c.

The first range of houses we entered consists of four vineries, each 31 feet long, 16 feet wide, 10½ feet in height at back, and 3 feet in height at front. These heights refer to that above the surface level. The front 3 feet above the wall-plate is of glass sashes, opening outwards all at once by a rod, &c. The border inside is nearly up to the glass A (see *fig. 2*, made merely from memory). B is the back

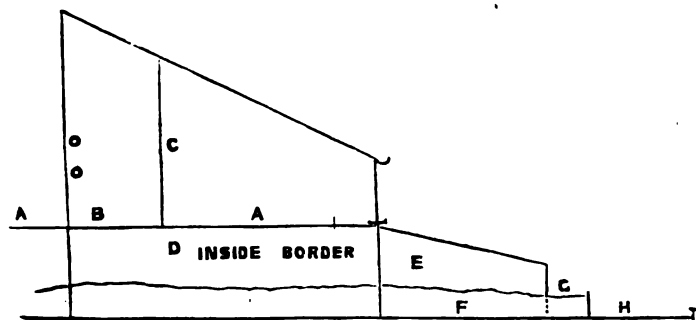


Fig. 2.

path 4 feet wide, bounded by a neat curb, from which a pillar c goes to the roof at every 4½ feet. On these pillars in some instances Vines are also trained, and an arch goes from pillar to pillar. The two middle vineries are for the earliest Grapes; and the borders for these at least, if not for the whole of the range, are chambered or arched underneath. The outside borders *z* are 9 feet wide, and are arched underneath at *r*, communicating with linings *o*, covered with board flaps, so that dung may be placed under the arches and the heat kept in. *H* is the pathway in the front, and the ground gently falls from the pathway.

Now let us glance at some of the peculiarities of these first-rate vineries. First, from the elevation of the borders, the chambering, and means used for drainage, it is utterly impossible that the Vines can suffer from stagnant moisture, and therefore nourishment can be freely given to them. Secondly, the Vines are all planted inside, about 18 inches from the front glass, and in every case the inside border is higher than the outside one, but with free communication between them. Thirdly, all the heating-pipes are 4 inches in diameter, and are placed pretty regularly and level across the floor of the house—a plan which we consider far prefer-

able to placing pipes in tiers above pipes, as we have them, because we found them so. These pipes in all the houses at work were well coated with sulphur. There was an exception to this placing the pipes on the level, and we consider a valuable one, in the shape of two small two-inch pipes, placed over each other some 18 inches from the base of the back wall. These, so placed behind the pathway, prevented any stagnation of air there, made the circulation of the internal atmosphere more complete, and alike enabled and required top ventilation to be more freely given. Then, fourthly, instead of sinking a huge pit for a Vine-border, it will be perceived that the whole, inside and out, is above the ground level; and then, again, there is the opportunity of heating these borders from beneath. The arches are formed of brick and good mortar, so that little or none of the enriching gases from the dung can reach the roots, nor is it desired they should do so. A root now and then may find its way through the mortar into the chamber, but it is soon destroyed by the heat or removed, as Mr. Hill has no idea of having a forest of spongioses whitening the top of his arches: he wishes these all to be confined to the good material above which he gives them so liberally. This mode of heating the borders from beneath with dung involves a great amount of labour and constant supervision, as the heating material is subject from mere changes of weather to great and sudden fluctuations of temperature.

On this account it is proposed to dispense with the dung and use hot water as being much more under command. With this heating from beneath, a slight covering—say from 9 inches to a foot—of dry leaves or litter is sufficient to keep up the desirable temperature in the borders, more especially as that covering is kept dry by moveable wooden covers 4 feet wide, and in lengths so that one or two lengths go over the border. These covers are made of rough boards fastened to cross pieces, and then a slip 2 inches wide tacked along each joint—a capital plan where green unseasoned wood is used, and even for any wood exposed to great alternations of wet and dryness. These well tarred will last a great many years, and will come in for many purposes of protection in the spring and autumn. Mr. Hill uses them largely in temporary pits, for protecting his bedding plants in spring. And, lastly, the borders were made simply of the very best materials. Some new ones that we examined seemed to consist chiefly of about half-inch slices of the fibry top part of some old pasture with a very liberal allowance of boiled bones. I would rather that such men as Mr. Hill and Mr. Henderson would tell us the quantity in proportion to soil rather than make a rough guess at it. These bones are boiled at the potteries for obtaining the gelatine, &c., and after this boiling the fermenting and rank properties are so greatly removed that they may be used to a much greater extent than fresher bones could be with propriety.

Though equally well chambered or drained the two end houses were for late Grapes, and would require no heating from beneath whilst so used. One of these had been planted in November, chiefly with Lady Downes' and Alicante, Kempsey and Meredith's, as far as we recollect, and they were now strong canes rising to and along the back of the house. In this house Vines were also trained to the rods by the sides of the path, where, no doubt, they would remain until the finest ones monopolised all the space. The laterals near the top were merely stumped in; but they had been removed fully half way up the stems, and would be removed gradually all the way to expedite the hardening and ripening of the wood. Some fine Azaleas stood in open spaces between the pillars. In the other end vinery, among other good fruit, were some huge bunches of the Trebbiano Grape approaching maturity.

From one of the middle vineries the glass was removed and the Vines closely pruned in preparatory to cleaning them and the house thoroughly. In the other, though the fruit was all gone, the wood was in fine condition. Here I noticed that a number of small shoots near the base of the Vine had been grafted with new or more desirable kinds, and after the graft had taken the shoot was laid or taken through a box filled with good rich material, and, rooting in the

box, derived extra strength before the roots of the grafted part established themselves in the border beneath the box.

The second range in the same garden consists of two vineries and one early Peach-house, each 52 feet long, 17 feet wide, 15 feet high at the back, and 1½ foot in front, air being given there by a moveable louver-board. One vinery had been cleared, but contained fine short-jointed wood. The second had some excellent Lady Downes' and Hamburgh Grapes; and the Peach-house was cleared, but the wood in excellent bearing condition. The rafters, I think, were about 4½ feet apart, and there was a Vine up the rafter and also one in the centre between. Here the same attention had been paid to drainage without chambering. The Peach trees were trained under the roof on two trellises, from two sets of trees, dwarfs in front and standards behind, against the columns, which Mr. Hill considers much preferable to having standards against the back wall, to be so far shaded by a trellis in front. In *fig. 3* 1 is the lower trellis, and 2 the upper trellis.

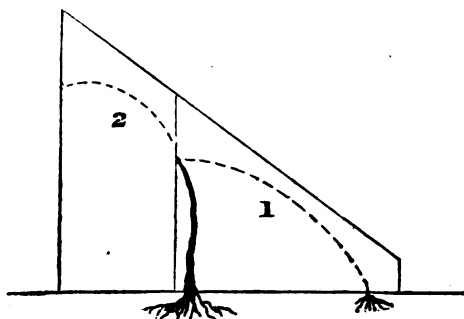


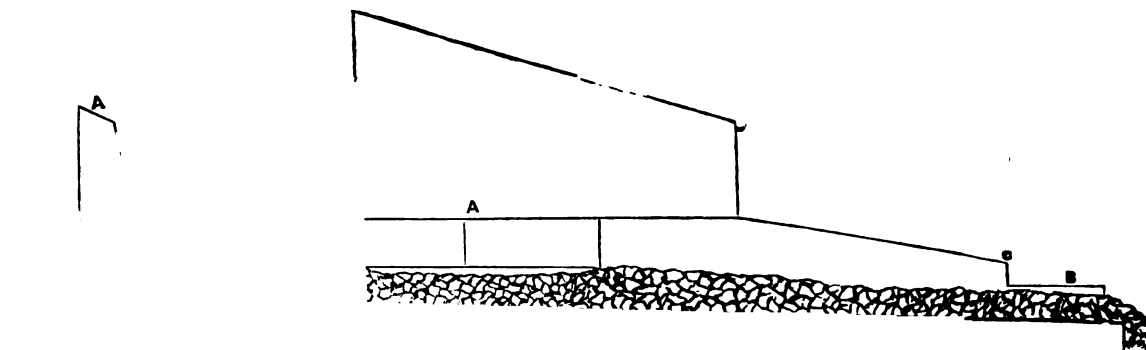
Fig. 3.

In the upper kitchen garden is a splendid range of glass, with a lofty conservatory in the centre. Taking them as they come, we first notice a Peach-wall fronted with glass, on which were many fine fruit, and the trees are almost sure to produce a heavy crop with far less care than on the open wall. This house is 116 feet long, 12 feet high at back, scarcely 1 foot in front, with louver-boards made to open upwards, and the sloping part of the roof is also made to open upwards; the width at base is 4½ feet. The front is very neatly supported on iron bars, which gives it a very light elegant appearance. Our recollection of this house is something as shown in *fig. 4*. The sloping shut roof at A is glazed. The trees looked remarkably well.

In front on the border were four masses at equal distances of the *Tritoma uvaria*, which were very magnificent, averaging from four to five dozen heads of flowers to each. We forget now how long they had been planted, but Mr. Hill kindly told us what he considered the two points essential to their successful culture. The first was, to dig out a good hole for them, and to fill it with good turfy loam

We next came to a very fine Muscat-house 52 feet long, 20 feet wide, 10½ feet high at back, and 5 feet high in front; length of rafter 21 feet, width of path about 4 feet; but a small border is placed close to the back wall, against which were growing Shaddocks, Lemons, &c. The Vines here are all planted inside, and are about thirteen years old. The whole crop was good, but some bunches at the east end were very fine. The house is roofed, small ridge-and-furrow fashion, the ridges being 2½ feet at the base, and 1½ foot at sides. The Vines are trained up the furrows of the ridges, and are, therefore, 2½ feet apart. The borders inside and outside are made as respects their bottom also in the ridge-and-furrow style, which renders the drainage more perfect. The front of the outside border as at c, *fig. 5*, is supported by a low wall, screened by a similar close hedge of Yew, and through these there are drain-pipes communicating with the surface of the walk b, besides the other drainage at the bottom. In the case of this fine house, too, the most of the border is above the surrounding level. In ventilating in front, the large upright sashes open outwards by means of a lever, and the back ventilation is effected in a very superior way by double louver-boards of iron, communicating with a hollow chamber in the top of the wall, which has a connection above the glass with the external atmosphere. The advantage of this plan is, that in the coldest weather the fresh air at top will be ameliorated and softened, and warmed before it passes in among the tender fruit and foliage. The house had previously been used as a pit for Pines and plants requiring stove heat, and a portion of these pipes had been sunk for bottom heat. On removing the pits to give the Vines the benefit of the whole house, these pipes were raised, and now there are seven four-inch pipes all on a level placed along the floor of the house. Mr. Hill is a great advocate for plenty of piping, and never over-heating the pipes, contending, as we have often done, that the extra heating of a small amount of piping is only a waste in whatever way it is looked at. A small amount of piping is often, as respects fuel, the exemplification of the old adage, "Penny wise and pound foolish." Mr. Hill assured us that even in very cold weather, and when the house was kept to 70°, these pipes were never so hot but that a person might sit down on them comfortably. On clearing out the pits the inside borders were not all made at once, fully half the space yet remains to be filled up, and thus the Vines can have a little more feeding-ground for a number of years to come. We here noticed several nice bunches of Foster's White Seedling, very interesting not only on its own account, but also from being said to have come from the same berry as that which produced the celebrated black Lady Downes' Grape.

The conservatory being in the centre, there is at the opposite end a Black Hamburgh-house of the same dimensions as the Muscat-house, whilst the outside and inside arrangements are similar. Here, too, the inside border is as yet only partially filled. Mr. Hill imagining that these Vines planted twelve years ago were deteriorating a little, lifted the roots last November, replanted them carefully in fresh



leaf, be it broken, be it green. On examining their borders, we found masses of old withered leaves, but concealed by the green ones and the brown ones, a full protection to the plant.

They were the same soil, and broken boiled bones, covered the soil with about a foot of tree leaves, above which the wooden covers spoken of were placed, and did not at all hurry the Vines, and now there are about 250 bunches of the same fine Grapes. A Fig-case of 40 feet,

and in the same style as the Peach-case, terminates the range in this direction.—R. FISH.

(To be continued.)

COLEUS VERSCHAFFELTI AS A BEDDING PLANT.

In reference to the communications in the August Numbers of *THE JOURNAL OF HORTICULTURE*, by Mr. Adey and "D.," of Deal, pages 103 and 146, respecting the *Coleus Verschaffelti*, wherein Mr. Adey states, "It is sentenced to perpetual imprisonment in the greenhouse;" and "D.," of Deal, that "it is a complete failure," I beg to make the following observations:—

In the first week of June I planted a small bed, sheltered from the north and east winds, with the *Coleus Verschaffelti*, the plants being only about 6 inches in height, having been struck late in the spring. They were planted 10 inches apart. In the first part of the season they made very slow progress, but since then they have grown remarkably well, filled up the bed, and are now sufficiently large to enable me to take between twenty and thirty cuttings from each plant. The colour is very rich, much more so than that of the *Amaranthus melancholicus ruber*, and particularly so when the sun is shining upon the bed.

My motive for writing these few remarks is, to suggest that before we discard, as a bedding plant, the *Coleus Verschaffelti*, which is so beautiful in foliage and easy of culture, I hope our friends will give it a further trial, and that we may hear the results of such trials in the pages of *THE JOURNAL OF HORTICULTURE*.—WM. POTTEN, *Gardener to Mr. Wilson, Camden Lodge, Sissinghurst.*

I CAN fully bear out what Mr. Earley says respecting this plant for bedding.

I had one plant last spring, and having made a small flower garden where we wanted all the variety we could obtain, I thought I would try it. I took off every cutting as soon as the young plants made three or four eyes, till the first week in April. They were grown as fast as we could without their being drawn till the first week in May. They were then put in a cooler pit for a week, and afterwards removed to a cool Peach-house till the 9th of June, when they were planted out. They were covered for about a week with mats at night, and they have been admired the season through by all who have seen them, and they are looking well now.—J. GOUGH, *Lea Castle Gardens, Kidderminster.*

FLOWER-BEDS ON A TRIANGULAR PIECE OF LAWN.

In the garden at the back of our house we have a triangular piece of grass. There are three beds of evergreens, one at each corner, and on the grass are four round beds, each 10 feet 4 inches in diameter, and we find a great difficulty in endeavouring to fill these with flowers of heights and colours corresponding. This year we had two filled with a scarlet *Verbena*, and dotted with the Oak-leaved *Geranium*, and the other two were filled with *Gazania splendens*, dotted with *Cineraria maritima*, but they were not satisfactory, and we are anxious to fix how they are to be filled next summer, in order that our gardener may know what to propagate now.

A bed near those I speak of was filled with *Lobelia speciosa*, dotted with Cloth of Gold *Geranium*, and three other and larger beds on another piece of grass were filled, one with *Phlox Drummondii*, one with *Calceolaria Aurea floribunda*, and the other with *Tropæolum elegans*.—AN OLD-SUBSCRIBER.

[From your description of the plot of ground with the evergreens at the corners, we presume that the four beds for flowers consist of three beds alternating with the evergreens, and the fourth a centre one. If this should be the case, the three ought to resemble each other in the height and habit of the plants grown, but the centre one may be different. And in many similar cases we would have said, Make the three outside beds *Verbenas* of different colours, but alike in

growth, and the fourth *Geranium*; but as you say *Verbenas* have not been satisfactory, something else might be tried. In a general way, dotted or mixed beds look best in isolated positions, and but rarely look well as forming features in a series of beds; and as your beds are small, we would plant the centre all with one kind, and edge it with another. If your beds would allow of a small dot in the centre, you might make three very effective beds, by planting a small centre piece—say 18 inches in diameter, with *Alyssum variegatum*, then a ring of something more than a foot wide with *Lobelia speciosa*, and an outer edging of *Cerastium tomentosum*. These three beds would by this means be all blue and white, the latter being foliage will be more durable than any flower; but the *Lobelia* is, perhaps, the most lasting of any flowering plant our gardens possess. Now, supposing these three beds form the outer series, and, as above advised, to be all blue and white alike, we must have something else for the centre—say Tom Thumb *Geranium*, with an edging of *Mangles*, or it may be Golden Chain. If this bed be only 5 feet in diameter, there is only room for one kind of plant for the centre and main portion of the bed, and one for the edge. As foliage is always of longer duration than flowers, the appearance of Golden Chain and *Cerastium* as edgings to beds will always be good from the time of planting up to the latest period in the season. If your beds had been larger, more variety might have been obtained, but in small beds only low-growing plants, in a general way, ought to be grown; and as you possess other beds where *Tropæolums*, *Calceolarias*, and other things may be grown, the mere fact of limiting those beds in question to so small a collection of plants need not be found fault with. The prettiest designs in flower-gardening contain but few colours, and a repetition of the same form is met with in all objects of art. If your garden possessed only the four beds alluded to, we might have advised more variety; but as it is, we should in our own case be content, for one season at least, with planting the beds in the manner advised.]

PRONUNCIATION OF GLADIOLUS.

It is very amusing to read in your No. 127, "that there is no doubt" as to the proper pronunciation of *Gladiolus*, and that it is to be pronounced *Gladilus*. In the first place there is very great uncertainty, until the dictionary has been consulted, as to how it ought to be pronounced; and after that has been done I will engage that there is not a Latin scholar in the kingdom who would pronounce the word as if there were no *o* in it—*Gladius*, a sword; *Gladiolus*, a little sword. So far from omitting the *o*, the modern Italian lays the accent on the *o*, *Gladiola* or *Gladola*, omitting the *i*. So that not only is there great doubt about it, inasmuch as the modern and ancient tongues of Italy differ about the word; but that under no supposition whatever can your dictatorial correspondent be right in his assertion. If he is one of your staff, pray fine him a week's pay.—F. COOK.

[We are exceedingly obliged by the note of "D.," of Deal, which we published in our last Number, and by the above communication, and we assent to most that they advance; and if Pliny, Columella, Palladius, and Apuleius, the only ancients who employ the word, we believe, had written in verse, they would have sustained, probably, by its metrical employment, all the short syllables claimed for the word by our friendly critics.

But that is not the question. The question to be answered in our pages is, What is the pronunciation accepted among gardeners? We replied, and we adhere to our reply, *Gladiolus*. If we are asked for evidence to sustain our statement, we replace in the witness-box Mr. Beaton, who wrote as follows in our earliest volume:—"It may be as well to put you on your guard against a common provincial way some people have of pronouncing the word *Gladiolus*, by putting the accent, or stress, on the letter *o*; whereas the true way of uttering the same is as if written *Glad-eye-lus*, putting the accent on the *i*."—(*Cottage Gardener*, i., 100.) Mr. Beaton was the right-hand man of Dr. Herbert, and others, who devoted great attention to this genus of bulbs, and, therefore, he knows how they pronounced the word, and, as we have already observed, the pronunciation generally accepted by gardeners is the pronunciation we accept.

The grammatically correct pronunciation of floral names cannot be insisted on; and he would be derided as pedantic who attempted to pronounce Anemone, Fuchsia, and many others in accordance with their derivation.—Eds. J. OF H.]

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

BOWENIA SPECTABILIS (Showy (Australian) Bowenia).—*Nat. ord.*, Cycadaceæ. *Linn.*, Diœcia Polyandria. Native of the banks of Endeavour River and Rockingham Bay.—(*Bot. Mag.*, t. 5398.)

CATASETUM CERNUUM (Drooping Catasetum).—*Nat. ord.*, Orchidææ. *Linn.*, Gynandria Monandria. Native of Rio Janeiro. Flowers green spotted with purple.—(*Ibid.*, t. 5399.)

SILENE ELIZABETHÆ (Elizabethan Catchfly).—*Nat. ord.*, Caryophyllææ. *Linn.*, Decandria Trigynia. Native of Italy. "A very handsome and rare hardy perennial." Flowers $1\frac{1}{2}$ inch diameter, bright rose colour.—(*Ibid.*, t. 5400.)

HOMOIANTHUS VISCOSUS (Clammy Homoianthus).—*Nat. ord.*, Compositææ. *Linn.*, Syngenesia æqualis. Native of Chili. Sent by Mr. Pearce, collector for Messrs. Veitch & Son. Most probably hardy, and good for summer bedding. Flowers in June, bright purplish-blue.—(*Ibid.*, t. 5401.)

MUSA SAPIENTUM var. **VITTATA** (Striped-leaved Common Plantain).—Native of the Island of St. Thomas, in the Bight of Benin. Leaves striped transversely with dark green.—(*Ibid.*, t. 5402.)

IKIAS.—Varieties raised by Messrs. Hooper, Covent Garden. *Crateroides*, crimson; *Viridiflora*, green; and *Plantus*, yellow.—(*Floral Magazine*, pl. 161.)

RHODODENDRON, *Countess of Devon*, raised by Messrs. Lucombe, Pince, & Co., Exeter. White upper petals spotted with purplish-crimson.—(*Ibid.*, pl. 162.)

BOURBON ROSE, *Rev. H. Dombrain*, raised by M. Margottin, Bourg-la-Reine, near Paris. Genuine carmine and very fragrant, form of Louise Odier.—(*Ibid.*, pl. 163.)

PYRETHRUM.—Varieties raised by Mr. Salter, Versailles Nursery, Hammersmith. *Roseum album*, bright rose with white centre; *Lysias*, crimson; and *Princess Alexandra*, pure white.—(*Ibid.*, pl. 164.)

HYBRID PERPETUAL ROSE, *Mrs. William Paul*, raised by M. Verdier, Rue du Marché aux Chevaux, Paris. Dark crimsoned-purple.—(*Florist and Pomologist*, ii., 121.)

PEARS, *De Maraise*, very beautiful and very first-rate. Ripe through November and December. *Belle Julie*, a delicious Pear, ripe at the close of October.—(*Ibid.*, p. 128.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHILE the dry weather continues hoe every part of the garden thoroughly, as those seeds that were ripened in summer (where weeds were allowed to perfect seeds and to shed them), have now vegetated and may be destroyed effectually, which is better than allowing them to stand over till spring amongst other crops. When a kitchen garden is, at this season, well stocked with autumn, winter, and spring crops, all neatly arranged and well cultivated, and the walks, &c., in good order, we think this not at all the least interesting period of the year in this useful department of gardening. As the summer crops are removed manure and dig, or trench the ground, before the autumnal rains set in. In stiff soils this is of the greatest importance. *Cabbages*, plant out immediately the main crop for spring, and after planting take the first opportunity of a dry day to fork all over between the plants. If this is occasionally done there will be no necessity for earthing-up, as the plants if not put too near together will grow short and stocky. *Capsicums*, the green pods of the large sorts should be gathered if there is any indication of frost. *Cauliflowers*, prepare ground in a south border or other favourable aspect for planting Cauliflower plants under hand-lights. A quantity may be pricked out in cold frames to receive protection from severe frost in winter. *Celery*, when attending to it on no account let it be earthed-up so as in any way to bury the heart of the plant. *Endive*, continue to tie it up for blanching. It may also be blanched with water & salt.

laid on the plants; this saves time, but at present tying is to be preferred. *Lettuce*, prepare ground for plantations of Brown Cos and Hardy Green. A double row of them or any other good hardy sort may be planted at the foot of the south, east, and west walls, the plants to stand 4 inches apart in the row, and if they should stand over the winter, which is sometimes the case with a little protection in severe weather, every alternate one can be removed to form other plantations. *Onions*, transplant the autumn sowing when they are a few inches high on a warm border. Let them be put in rather thickly to allow for pulling out in the spring. Of course, a portion may be left in the seed-bed, but it is preferable to transplant the whole.

FLOWER GARDEN.

Hollyhocks and Dahlias will still require occasional looking after to secure them against the effects of high winds which may now be expected. Herbaceous plants will likewise require the stalks of decayed flowers to be removed, and such as are still in bloom to be carefully tied up. *Asters*, *Phloxes*, &c., will now be making a fine show, and should have corresponding care bestowed upon them. Let the borders be cleaned, filling up vacant places with spare *Chrysanthemums*, spring-struck Pansies, or spring-flowering bulbs. Carnation and Picotee-layers which are sufficiently rooted, to be taken off and planted or potted. If potted, it is not advisable to use soil of too rich a nature to winter them in, and a couple of layers in a 48-sized pot will be sufficient. See that faded blossoms and seeds are removed from flower-beds and borders, other blossoms will be thus encouraged. Much of the vital energy of a plant is expended in the perfecting of its seeds.

FRUIT GARDEN.

Look over fruit remaining out of doors and gather it as it becomes fit, as if it become over-ripe it will be liable to be blown down and bruised; also, examine that in the store-room frequently, as there will occasionally be a few decaying fruit found for a few weeks after housing, and these should be removed as soon as they are perceived. Keep the fruit-room cool and airy in order to allow of the escape of the moisture given off by the fruit, which is considerable for a few weeks at first. Examine Plums or any other fruit protected occasionally by covering to see that they are not spoiling. Where it is intended to make any fresh plantation of fruit trees this season, the ground should be prepared at the earliest convenience, and any fresh soil to be used for planting should be thoroughly exposed to the action of the weather, so as to have it in a mellow state when wanted for use. Filberts are now ripe in most situations and should be gathered. They generally keep in good condition in a moderate-sized hamper. Packed firm, in this way they do not suffer from excess of moisture, and the kernels keep plump and sweet till May or June.

GREENHOUSE AND CONSERVATORY.

The most desirable object in the management of the majority of plants in these structures, and one which must be constantly kept in view, is that of procuring a robust and hardy growth, and of lessening their vital energy that they may gradually accommodate themselves to the changing circumstances of the season. The influence of the autumn weather should be permitted to exert in a degree its legitimate influence. Ventilation judiciously managed will assist in accomplishing the result recommended. Water will be required in less quantity both for the roots and foliage. As all the more delicate greenhouse plants are by this time housed, the few remaining out may be allowed a short time longer out, provided the weather continue dry. *Camelias*, *Chinese Azaleas*, and some *Acacias* will not be hurt for a week or two if circumstances do not permit of their being housed immediately. Give all the air possible to *Heaths* and other hardwooded plants, and bring *Chrysanthemums*, *Cinerarias*, &c., under cover as soon as you can find room for them. Thin-out the bloom-buds of *Chrysanthemums*, and water with liquid manure. The climbing plants to have frequent regulation, shortening back the shoots going out of bloom, and training the remainder in a suitable manner, to effect a free natural habit.

STOVE.

The twiners on the roof here should also now be more than kept within bounds, cutting back all shoots that have

done flowering, and tying the others so as to obstruct light as little as possible. Place specimens ripening their wood in the coolest part of the house, and water sparingly at the root. Achimenes, Gloxinias, and Gesneras that are properly ripened-off may be stored away in any dry place where they will be secure from frost; but take care to place them where they will be free from damp, and they should not be exposed to a lower temperature than 45° or 50°. To effect this a spare house or pit is best for the purpose, when they can be placed near the glass; to be supplied with water only to keep them from flagging. This will allow the foliage to ripen gradually, and, as a matter of course, the tubers. Amaryllis and the different varieties of Japan Lilies require the same treatment; the latter, however, being more hardy, may be ripened-off at the base of a south wall or cold pit.

PITS AND FRAMES.

Mignonette, Stocks, &c., should now be placed in their permanent situation for wintering. The Lily of the Valley intended for forcing should now be potted and plunged overhead. The Neapolitan Violets may also be potted; and plunged in a cold frame in a sunny situation. Continue to pot-off cuttings immediately they have made roots. See to securing as many cuttings as possible of any scarce plants which it may be desirable to increase while there is a fair chance of rooting them, and also be prepared to protect Scarlet Geraniums and other things which it may be intended to take up and winter, for we may expect frost at any time at this season.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WE hope our friends in the north will have a share of the splendid weather we have lately had, instead of the floods which have visited them almost without intermission. Trenched over our Onion-ground, placing some short manure from lawn-mowings, &c., at the bottom; and planted out with the main crop of Matchless Cabbage. Find already we will have two enemies in this somewhat exposed quarter. The first morning we saw some twenty plants hanging their heads, and found they were cut over beneath the surface by huge grubs, there being one at each plant so cut down. We tried the gentlemen by placing them on quicklime and covering them with it, and also with soot, &c.; but we might as well have regaled them with tea and toast, for after a couple of hours they were as ready for a nibble as ever. We know no effectual remedy for this enemy except catching the fellows after they have done the mischief, and treating them as the law is obliged to treat the most incorrigible wrong-doers. All sorts of baits, and traps, and enticements we have found to be of very partial efficacy. Our next enemies are either hares or rabbits, and we are as yet afraid to hunt much for them, especially with dogs, in case they should chase them into our flower-beds, from which these Cabbages are merely separated by a dense Ivy hedge; for now, with the exception of two or three beds of Calceolarias, from which the flowers have been dashed without succession enough to cover them, the flower garden is as good, or better, than it was in July and August.

Watered Celery well; earthed-up a little bit more, so as to have plenty for table, stewing, &c. On clearing some Peas, planted-out several beds, placing the plants about 9 inches apart, as we do not expect them to be very strong, but they will be useful in the spring months. In planting such beds we do not take out much soil—little more than the manure fully fills up, or rather more, as in stiff soil late Celery suffers more from damp than from cold and dryness. Early Celery, on the other hand, when it bolts and runs, and is only fit for soups, if even for that with particular people, generally does so from dryness, and this dryness is frequently, if not generally, the result of earthing-up Celery bit by bit, an inch or two at a time. The reasons were given in this Journal some years ago. When treated as here stated we have seldom had a single head of early Celery run or bolted. Some amateurs and the holders of small gardens can scarcely credit the economical question involved in the Dwarf Incomparable Celery. Well, all we can say is that we speak of it as we find it; and merely on the score of economy we think a foot of earthing-up, or even

less than that, a very different affair from the huge mounds and trenches generally given to Giant Celery. If our adviser "A. Z.," with his few rods of ground, still prefers the Giants and the mounds, why, of course, we have no fault to find, as we always advocate that every man has a right to his own individual fancy or whim so long as he indulges it at his own expense.

Took up our last row of Potatoes, the Dalmahoy, and found an extraordinary crop—some thirty good-sized tubers, and some, too, large at a single root. The tops, however, were gigantic, and in our close cropping we would have had more than two rows of Early Frame or Ashleaved Kidney in the same space. Here, too, we found a few cases of slight disease; whilst all that were taken up before the drenching rains were sound. Filled all the spaces vacant with Brussels Sprouts and Cottagers' Kale, lifting those that had been previously pricked-out; and, notwithstanding our killing many butterflies, found a good many caterpillars on them, and, therefore, dusted them well with lime and soot, and scattered it well below the leaves with a small birch broom before planting them out. Went over young plantations of Cauliflower, Broccoli, and other Greens in the same way; as, unlike the grub, very little of the caustic lime does for the caterpillars. Planted-out more Endive, and covered some of the forwardest with pots, tiles, and slates—anything just to keep the light from it. Short boards, 9 to 12 inches wide, laid along the rows answer admirably. Sowed a few more Lettuces, and watered the young Cauliflower plants not yet large enough to prick-out. Prepared a slight hotbed for our Mushroom spawn, making it about 6 feet square and some 15 inches deep, so as just to throw in a mild bottom heat. Placed a piece of old latticed fence over the bed to keep the spawn-bricks from the hotbed, and having inserted a small piece of good spawn in the two holes of each brick, and covered over with stiff cowdung to keep the spawn in its place, commenced building the bricks in an obtuse cone, leaving about an inch from brick to brick, so that the heat should circulate freely between them; then covered all with a little clean straw, and placed a foot of littery manure that would yield scarcely any heat over all. This heap will require examining frequently, as the heat should not be more than from 70° to 75°. If some bricks be thoroughly permeated before the rest they must at once be taken out. Even when the spawn is running freely much overheating will render nugatory all the previous labour.

FRUIT GARDEN.

Much the same as last week. Will take means for keeping heavy rains from early Vine-borders and those in which Vines are now ripening their fruit. Have been obliged to fill our late house with plants, owing to the necessity of repairing and altering the house in which they were kept. Gave more heat and air in consequence. Gathered fruit as it ripened. Pears are now swelling freely, though the roots are scarcely moist enough.

ORNAMENTAL DEPARTMENT.

Much the same as last week. Pricked-out annuals, perennials, &c. Tree Carnations planted out for winter-flowering should be lifted before the end of the month with balls, and placed in pots that will just admit the balls. Flakes and Pinks to be forced cannot be too well established in the pots before placing them in gentle heat. Anne Boleyn Pinks and most Cloves and Carnations will bloom naturally in the autumn and winter months under glass without any heat worthy of the name of forcing, if they are prevented blooming in summer, by taking off the flower-stems as they appear. When we used to have huge masses of the Perpetual Carnations in winter, in a low-temperated greenhouse, we never allowed a flower-stem to show until towards the end of August. The most splendid beds of Perpetual Carnations we ever saw we used to have in August, September, and October; but, of course, they were not stopped, and they were useless for spring and winter work. We regret now that other plants becoming favourites we let these fine flowers slip through our fingers, which must often be the case in places with limited room and where there is a constant contest going on between old and new combinations. When *Salvia fulgens*, splendens, and *gesneriiflora* are planted out for winter and spring-flowering, they should now be lifted, potted, and placed in a shady

place, watered but not deluged afterwards, and syringed in sunny days to prevent excessive evaporation from the leaves, until the roots are working freely into the little new stuff round the sides of the pots. When Chrysanthemums are planted out in a similar way, it is best to defer the lifting and repotting until the flower-buds are formed, and treated as advised above they will hardly lose a leaf. This is, on the whole, the easiest way for obtaining good specimens with strong healthy foliage down to the sides of the pots.

Rolled the lawns, as the dry weather now after the late soakings has brought the worms and their heaps in masses to the surface, making, from the roughness, a lawn disagreeable. We fancy the worms do not relish the rolling, as it seems to make them descend instead of ascend. The safest mode of keeping them at bay is deluging with lime water two or three mornings after rolling, for then the fresh holes will be all open—a plan very suitable for small grass plots, but hardly practicable on acres of grass. Though they have not yet appeared, we may expect heaps to be raised by the worms at the sides of fine walks, thus disfiguring the regularity of their outline, and for their prevention we know nothing better than strewing the sides with fine-pounded salt. Recollect we say the sides—say for 6 inches wide, for we would never salt a walk at all smooth at this season without expecting to find it damp and uncomfortable all the winter through. When a walk is very rough on the surface the salting will be less injurious. Walks in general—that is, moderately smooth ones, in our opinion should never have salt after midsummer; and as to applying it, we have found no plan preferable to strewing it on the gravel in a hot sunny day, and when several of such days may be expected. Of course, by this plan the walks do not look so nice for several days as when the salt is applied with hot or cold water at once.

Went over the flower-beds once more, regulating, picking decayed blooms, &c.; and were it not for a few leaves flying about from trees, and which begin to drop early from the great drought, the flower garden as a whole shows no signs of autumn. Some two or three masses of *Aurea floribunda* Calceolarias that were excessively thick with bloom have suffered most from the rains, as the roots were very dry at the time, and though plenty of blooms are showing it would require fine weather to render the masses equally fine again. Such kinds as *amplexicaulis* and *Aurantia multiflora* have suffered but little and are still gay with seemingly abundance of succession flowers. One light brown kind called Robert Burns, a good deal like the brown Prince of Orange, and that was scarcely so good as the latter in the first part of the summer, is now much better. Such small dark kinds as Victory suffered greatly from drought, and we fear the rains came too late to give us an equally dense amount of flowering. Such kinds as Crimson King have suffered less. On the whole the Calceolarias have suffered less than we could have expected from such dry weather as we had, and no water to help them with. No season could have been better for Scarlet Geraniums of all kinds, and we do not think we recollect ever seeing them better. With ground pretty well stirred at first they scarcely require any water after being once established. The only regular failure we had owing to the dry weather and scarcity of water, was with the *Grandiflora* white Feverfew, which was first-rate with us last year up to the end of October. This, placed in a position of honour in a ribbon-border, between Trentham Rose Geranium and Perilla, became too shabby for its position, and a few weeks ago we cut or covered it up by drawing the Perillas and Geraniums close together, and so completely filling the space that no visitor would think otherwise than that the border was planted exactly as it looks now; and some who did not know think that it is much better as it is, though we do not think so ourselves, as the white seemed to us to relieve both masses of colour better than when placed as now in juxtaposition.

Went on putting in a fresh batch of Verbenas in 48-sized pots, only a few being put in at first into 60-sized pots; these are now rooting freely. They stood on the ground with a frame over them, and during the heavy rains were deluged by the rain passing through the frame. A bed of litter was made, and ashes put on the top for the pots to stand on, and their tiles were placed between the litter, so that the water would not get into the pots.

beneath the bed, instead of soaking into it. Had they remained long in their first position, and the rains had continued, no amount of air would have prevented damping. Our attention is still given to cuttings of Geraniums: even taken with the greatest care, the beds are apt to be disfigured more or less, showing the necessity of reserve-grounds for this purpose. We will prepare a cold pit for Calceolaria cuttings as soon as possible, but the middle of October, if there is no frost, is quite time enough for the general crop. A few rare kinds may be propagated sooner, and topped to make plants, but much of the success in summer, we think, depends in not striking the cuttings too early, and never allowing them the least artificial heat. Other departments much as previous weeks.—R. F.

DEATH OF MR. HUGH LOW.—We regret having to record the decease of this distinguished florist and nurseryman. He died on the 15th inst., at the Clapton Nursery, in his 70th year.

COVENT GARDEN MARKET.—SEPT 19.

Of vegetables and fruit of all kinds the supply continues abundant, both from home and abroad. Pears and Plums are very plentiful, the former consisting principally of Williams' Bon Chrétien, and Louise Bonne of Jersey, and some Marie Louise. Filberts are in good condition; and Cobs are bringing from 55s. to 70s. per 100 lbs. Oranges and Lemons are scarce, and prices have risen. Potatoes are very abundant, and also very good, prices having a downward tendency. Cut flowers consist of Orchids, Roses, Asters, Pelargoniums, Marigolds, Mignonette, and Ageratum.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	1	6	to 4	0			
Apricots.....	doz.	0	9	0	0				
Figs.....	doz.	1	6	2	6				
Filberts & Nuts 100 lbs.	65	0	75	0					
Grapes, Hamburgha. lb.	1	6	5	0					
Muscate.....	lb.	3	6	6	0				
Lemons.....	100	10	0	26	0				
Melons.....	each	1	6	4	0				
Mulberries.....	quart	0	6	0	9				
Nectarines.....	doz.	2	0	to 5	0				
Oranges.....	100	15	0	30	0				
Peaches.....	doz.	3	6	12	0				
Pears.....	bush.	5	0	19	0				
Pears.....	½ sieve	2	6	5	0				
Pine Apples.....	lb.	3	0	6	0				
Plums.....	½ sieve	3	0	6	0				
Quinces.....	bush.	0	0	0	0				
Walnuts.....	bush.	14	6	20	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad.....	bush.	0	0	to 0	0				
Kidney.....	½ sieve	1	6	4	0				
Beet, red.....	doz.	1	0	1	6				
Broccoli.....	bundle	0	0	0	0				
Cabbage.....	doz.	0	9	1	3				
Capicums.....	100	1	3	2	0				
Carrots.....	bunch	0	6	0	8				
Cauliflower.....	doz.	3	0	5	0				
Celery.....	bundle	1	6	2	0				
Cucumbers.....	doz.	2	6	10	0				
pickling.....	doz.	0	8	1	0				
Endive.....	score	1	3	2	6				
Fennel.....	bunch	0	0	0	0				
Garlic and Shallots, lb.	0	8	0	0					
Gourds & Pumpk., each	0	0	0	0					
Herbs.....	bunch	0	3	0	0				
Horseradish.....	bundle	1	6	4	0				
Leeks.....	bunch	0	3	to 0	0				
Lettuce.....	score	1	6	2	6				
Mushrooms.....	pottle	1	0	2	0				
Must. & Cress, punnet	0	2	0	0					
Onions.....	bunch	0	4	0	6				
pickling.....	quart	0	6	0	0				
Parsley.....	bunch	0	3	0	4				
Parsnips.....	doz.	0	0	0	0				
Peas.....	bush.	0	0	0	0				
Potatoes.....	½ sack	5	0	8	0				
Radishes doz. bunches	1	6	2	0					
Rhubarb.....	bundle	0	0	0	0				
Savoy.....	per doz.	0	0	0	0				
Sea-kale.....	basket	0	0	0	0				
Spinach.....	½ sieve	1	6	2	0				
Tomatoes.....	½ sieve	2	6	5	0				
Turnips.....	bunch	0	3	0	6				

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 162, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

FERN LEAVES FADING (H. B.).—The change of colour is a consequence of growth-completed. It is natural change, not from disease.

HARE'S-FOOT OR DEER'S-FOOT FERN (*A Constant Reader, Dublin*).—It is not indigenous in England, nor is it found anywhere in a wild state that we know, except in the South of Europe, North Africa, and the Canary Islands.

COTTAGE GARDEN EXHIBITIONS (S. D. S.).—If you will send us an envelope directed to yourself, and with a 2d. postage stamp, we will send you a pamphlet on the subject.

TWELVE HARDY HEATHS (W. C.).—You will find the following very good for a border:—*Erica australis*, herbacea, herbacea carnea, cinerea alba, cinerea rubra, mediterranea, mediterranea hibernica, stricta, tetralix rubra, vagans carnea, vulgaris alba, vulgaris coccinea. To the above you might add *Mensisia globularis*. There are other varieties also, all good in their way, but enough have been given to form the nucleus of a collection. Perhaps the most useful are *E. herbacea carnea* and *E. mediterranea*, but all are useful.

FOR WINTERING BORDER PLANTS (J. F. S.).—Your span-roofed 30 feet long would answer admirably for preserving border and potted plants. You can make it economically by putting up a plain and simple structure, employing but little woodwork, and having large panes of glass. Provision must be made to admit abundance of fresh air. After plants are cleared out you could either have ornamental Cucumbers or useful by growing Cucumbers or Melons, or if you could make or conveniently, you might have a crop of Grapes in September. But Melons could be grown in such a house by merely making a training the plants to wires fixed about 1 foot from the glass. It would be more certain with a pipe under the bed. One four-inch could not be sufficient for top heat to keep out an ordinary winter unless the house were very narrow indeed. Two four-inch pipes one end and along the front would be necessary for a house 10 feet and two four-inch pipes all round if it exceeded 15 feet in width. I should prefer pipes for bottom heat instead of a flue, and as you think a boiler we do not see the necessity for a flue at all, except it were to give heat, when you might have a flue in addition to the pipes for it, and so make use of the heat that necessarily escapes from boilers, which would, were there no flue, pass into the chimney and be lost. It is unusual to carry pipes under a path; but this is best done after the pipes have risen from the boiler some distance, when by an elbow they are carried under any path not lower than the opening in the boiler return-pipe. Pipes are commonly brought under paths by setting a pipe so that the flow-pipe will rise a little, but still be lower than the return-pipe. The flow-pipe should rise from the boiler about 1 foot in a house to the extremity, when it may fall in the return to sink the water in the boiler for the return. You may carry the flow-pipe any above the boiler, but it will work as well with a rise of 1 foot in 12 as with a rise of 12 yards in that distance. It is not usual nor easy to carry the pipes up and down and up again, though they may be in that way so long as it will not do to take the flow-pipe up and down below the top of the boiler, and up again: the water will not rise in that way; but, after it once falls below the top of the boiler, it must be carried from that point to the bottom of the boiler. We recommend you to have a saddle boiler, and if you send a plan of one to the dealers in hot-water apparatus who advertise in our paper, they will send you a small boiler capable of heating your house in a small sum. The smallest saddle boiler made will be sufficient for the 80 feet of piping you will need for top heat, and for the 30 feet for bottom heat.

PEACH-HOUSE (O. M.).—For a Peach-house we should continue the range at 25, making it any length, but the same width and elevation. If your boiler is powerful enough a branch might be connected with the flow-pipe heating theinery to heat the Peach-house, connecting the return with that of theinery. For a Peach-house the trees should be planted out. The border can be both inside and outside, or either side. We do not think there is much difference between growing in pots or planted out in a border; but the amount of trouble in watering trees in pots is double that for those planted out. If you have a variety, have an orchard-house; if but a supply, we should you to have a Peach-house. A span is best for an orchard-house, would be most sheltered, we should say, at 25. It might be at 25; if, of course, would receive the full violence of a south-west gale. We should oblige for your notes on Centaurea candidissima.

SEEDS FROM INDIA AND CHINA (M. H.).—We presume you had no names. Had you the names with them it would have enabled us to answer your queries had you sent them, for there are so many plants from those countries that require a diversity of treatment to their wants. Some may be annuals, others trees or shrubs; one seed peat soil, another loam, whilst a third would do better in a mixture of both. Had we such a packet of seeds we should make a kind of compost composed of one-fourth fibry peat, a like quantity of sand, and one-half mellow loam from rotted turves, with a liberal sprinkling of white sand. This, well incorporated and sifted, will grow any description of plant. You will well drain the pots in which the seeds are to be sown, and fill them with the riddled compost to within an inch of the pot-top or rim for seeds the size of a pea, lessening or increasing the depth according to the size of the seeds; place these so that they are double their diameter from seed to seed, and cover them with soil same depth that the seeds are respectively in diameter. The seeds than peas had best be sown in single pots—that is, one seed in each. If you do this sowing business in March of next year; and all being done those from India in a little bottom heat, if you have it, in your and those from China in bottom heat in the greenhouse, or place them in a hotbed with the bottom heat at 75° or 80°, but not exceeding 85°. When they are fairly up and begin showing their rough leaves place them in the greenhouse and the Indians to the stove, placing them in the warmest part of each respectively for a few days, gradually increasing them. Water sufficiently to keep the soil moist, and when they have a pair of rough leaves pot them singly if strong growers, or put two or three in a small pot if moderate growers, and repot them as soon as the roots reach the sides of the pot. Continue to do this as the plants become established, when we should advise you to call in a friend who has a good knowledge of plants, who in all probability will be able to assist in naming them for you; and if you look in our paper you will be sure to find information how to proceed with them if plants worth cultivating. We are very cautious, however, about seeds that we know nothing about, for it is very mortifying to fill a pot with what often is rubbish.

SHANKING (G. J. H.).—We have little doubt that the Vine-roots, for nourishment in "the very shallow surface soil by the roots of the, &c., grown in the border," have been driven down for a supply into "the stiff heavy marl which is the subsoil." If you cannot clear the shrubs, &c., and lift the roots of the Vines to near the surface, the best plan will be to enrich the surface soil, and keep it mulched with water during dry weather in summer. The exclusion of the air from the soil in which the Vine roots are very prejudicial, during the growing season they must be too cold to keep pace with the growth in the branches.

APPLE CULTURE (John Forrester).—Glendinning's "Practical Culture of the Fine Apple," will suit you. It was published by Longman & Co.

FLUE HEATING A GREENHOUSE (Clericus).—We think the way in which you propose to heat your greenhouse would do. It would be an improvement to bring the flue from the furnace at a under the path, so that the door would open to the front of the house, and then along the front, then across the other end to a, where it would make its exit in the chimney. For so narrow a house it does not matter much where the flue is situated, only the heating surface as a rule should be placed where the roof is lowest. The furnace need not be larger than 1 foot 6 inches long, 16 inches wide, and the same in depth. The flue should not be more than half the furnace dimensions. Six-inch pot-pipes with the joints mortared will suit you. The flue should rise from the furnace the height of the furnace into the flue. It may then run nearly level to the chimney.

FLOWERS TO BLOOM SIMULTANEOUSLY (Mrs. C. Sidmouth).—The four large beds now occupied with Scarlet Geraniums and to be planted with Turban Ranunculus will be charming next May; but those filled with Crocuses and Tulips after purple Verbenas and yellow Calceolarias would no doubt look well individually, but we should only deceive you if we were to say they would flower simultaneously with the Ranunculuses. We should advise you to plant the scarlet Turban Ranunculus early in November, and edge them with striped Crocuses, as La Majestueuse, Pride of Albion, and Sir Walter Scott. In the yellow beds we would plant Yellow loose double Tulips, and edge them with yellow Crocuses. The purple beds may be planted with Aubrietia purpurea grandiflora, a hardy perennial, edged with purple crocuses. The Crocuses would make the beds gay in March and April, and the other occupants might be expected to flower pretty nearly together. We do not know of a purple or any other description of Crocus that flowers simultaneously with the Ranunculus. You will plant the bulbs as early in November as convenient.

FERNS FOR GLASS CASE (H. F. L. K.).—Of Ferns suitable for a Fern-case in a room never below 45° in winter—Adiantum assimila, A. carvatum, A. cuneatum, A. reniforme, A. pubescens, and A. setulosum. Suitable for a small hanging-basket—Asplenium appendiculatum, A. Selangeri (Velekianum), A. bifidum (fossiculaceum), A. decussatum, A. formosum, A. ebenneum, A. monanthemum and A. monanthemum proliferum; Blechnum gracile, B. australe, B. latifolium, B. occidentale, and B. lanceola; Campyloneuron angustifolium, C. rigidum, and C. Fortunii; Davallia dissecta, D. canariensis, and D. tenuifolia; Doodia (Woodwardia) aspera, D. caudata, D. imbricata, and D. media; Doryopteris palmata and D. sagittifolia; Lastrea acuminata, L. glabella, and L. decomposita; Lomaria alpina, L. nuda, L. Patersoni, and L. L. Herminieri; Acrophorus (Microlepia) novae-zealandiae; Nephrodium molle corymbiferum; Nephrolepis pectinata and N. tuberosa; Nothochloa lundigeri; Pellaea flexuosa, P. geraniifolia, and P. ternifolia; Pleopeltis peruviana, P. stigmatica, and P. pustulata (the two last are the sort of Fern to plant in the half of a cocoa-nut shell and suspend from the roof); Platycerium alcorni (this is extremely beautiful treated in the same way as the two last); Platytoma falcata and P. rotundifolia; Polystichum triangulum (mucronatum) and P. vestitum, rare; Pteris cretica albo-lineata, P. serrulata, P. crenata (chinesa), P. scaberula, and P. tricolor; Scolopendrium Krebsii; Stenosemella aurita; Tenuiopsis (Vittaria) lineata; and Xiphopteris (Grammitis) serrulata. All the above are handsome, distinct, small or moderate-growing species; but the handsomest of all for a Fern-case are the Filmy-Ferns, as Todea pellucida, Hymenophyllum demissum, H. abruptum, H. flabellatum, H. flexuosum, &c.; Trichomanes elongatum, T. reniforme, T. venosum, T. crispum, and T. radicans or T. speciosum, the Killarney Fern. These require a humid atmosphere. Nearly all Mosses are suitable for Fern-cases; of them we may instance Selaginella uncinata, S. africana, S. densa, S. apoda, S. jamaicensis, S. obtusa (helvetica), S. denticulata, S. erythropus, S. viticulosus, S. Widenovii, and several others. The seven preceding the last are beautiful for suspending in small baskets or cocoa-nut shells in the Fern-case. All except the Filmy-Ferns require peat one-half, leaf mould and light loam in equal parts, with a liberal admixture of silver sand. Good drainage must be provided if they are expected to thrive long. They require to be kept moist in winter and wet in summer, and are planted like any other plant. Cocoa-nut dust, with a little loam added to it, is the best of all composts for Ferns. Our "Fern Manual" contains full particulars of their cultivation.

LEAN-TO HOUSE FOR FERNS (An Irish Subscriber).—We should prefer an angle of 45° for the roof, which, with a wall 6 feet high to the north and a 15-foot rafter, with one end of it fixed on the north wall and fastened at top to the greenhouse wall near the top, would give an angle of 45° nearly, and make the house some 12 feet in width. You can have it wider by having the roof flatter or less steep. There is no necessity for any lights in the back wall, and you can ventilate it by having slide lights at top or to lift up, having about half the number you would employ for an ordinary greenhouse. We think your other arrangements would do very well, except the mode of heating, which we fear would not answer unless you grew hardy Ferns, which you, no doubt, do not intend to grow in-doors. The openings in the back wall will not admit sufficient warmth in winter to keep the frosts at bay; therefore, you must have at least a couple of four-inch pipes along the lowest part of your fernery. Shelves formed of peat are quite a novelty, and no doubt answer well; but we should think that if a rockery were formed and the Ferns planted out you would like it better. You can have the house any width—the wider the more it will cost; but, irrespective of that, we would have it 12 feet. Such a house will require shading with canvas, or some material, from April until October in bright weather.

FOUL ASPARAGUS-BEDS (Idem).—Fork out the couch grass at once, but do so without injuring the crowns of the Asparagus. By no means must it be left a day longer, but fork it out whenever it appears and pull up all weeds forthwith, and in after years never let a weed stand an hour after it is visible or large enough to pull up. It would be a pity to take up the Asparagus, for it would not thrive well if planted again, and unless you have many beds your supply would be cut off for three years at the least, in addition to incurring unnecessary expense in making new beds, &c.

CUTTINGS OF VERBENA TRIPHYLLA (M. F.).—This Verbena may be planted outside in June, and taken up on the approach of frost. Cuttings strike freely in loam and leaf mould, with the addition of a free admixture of silver sand, selecting cuttings of the half-ripened shoots and placing the cutting-pots in a little bottom heat. They root more tardily, but without many failures, in the greenhouse; and we have struck them in the open border under a hand-glass.

BRICK STOVE FOR A GREENHOUSE (W. H. M.).—Fire-bricks are 9 inches long, 4 inches wide, 2½ inches thick. Fire-lumps are 9 inches long, 9 inches wide, 4 inches thick. The latter are the most durable, as the mortar burns

wont to do, and then the feeding was discontinued, the bees not having store enough of their own to carry through the breeding process; so that the larvae are not supported by proper food, and are constitutionally in a consumptive state.—A LANARKSHIRE BEE-KEEPER.

TWO QUEENS IN ONE HIVE—FOUL BROOD.

MR. WOODBURY'S mystery of a supernumerary queen I consider no uncommon incident in a hive, and had he allowed her to remain he would have seen the rightful sovereign expelled to a certainty. I may just give an instance which occurred recently here in the apiary of a Mr. B. This gentleman had a queen expelled from a hive in the middle of the honey season, and she being to all appearance perfect, he was determined to lose no opportunity of watching the future proceedings of this hive, when, to his astonishment, on the same day he had the pleasure of seeing a young queen take wing, and she afterwards turned out exceedingly prolific.

I heartily agree with Mr. Woodbury's opinion on foul brood, and look on Mr. Lowe as being quite at sea when treating it as an artificial disease. I have seen it in the most virulent form in the cottager's apiary, as well as in the apiary of the scientific bee-keeper.—STEWARTON APIARIAN.

[I am perfectly aware that a supernumerary queen in a hive is no unprecedented occurrence during the swarming season, and quite agree with the "STEWARTON APIARIAN" as to the probable dethronement of the rightful monarch if the interloper had been suffered to remain. Two similar cases have in point of fact already come under my observation, but both these, like that instanced by my Ayrshire correspondent, occurred in the middle of the honey season. As stated in my former communication, what excited my astonishment was finding a second queen so late in the season with no drones existing in any of my hives, and in a colony reduced to the condition of a recent swarm.

With regard to foul brood, it is very satisfactory to have a verdict in my favour emanating from so high an authority in what our Renfrewshire friend designates as "the great centre of bee-knowledge;" and I should be greatly obliged to my Stewarton correspondent if he would favour us by relating his experience of this disease which has enabled him so decisively to confirm the testimony of—A DEVONSHIRE BEE-KEEPER.]

RANDOM APIARIAN NOTES.

THE HONEY OF 1863.—The honey taken this season is not so delicate and nice in flavour as that even of the unpropitious year, 1861. There was some honeydew one whole week, at the commencement of July this year. Probably, this might have been the cause, or was it the three weeks wet weather in the main honey-gathering month of June? The quantity is far above what was expected.

MR. WOODBURY.—I have been found fault with for some observations on Mr. Woodbury's bee-management. I am not aware of saying more than that I was sorry for his failures. Indeed, I admire him for his honesty in confessing them. If the writers on bees had been as faithful as Mr. Woodbury, we should not have been inundated with these theoretical treatises which have talked of the most tedious and difficult experiments as perfectly easy; and in particular that of depriving a stock of bees of the whole of their combs, forcing them into a new and empty hive and making them begin *de novo*! How often has this succeeded? I never saw it done where desertion did not take place soon afterwards with ruin and loss of the bees. A too great deprivation of the combs will also bring on the same misfortune. I can assure your correspondent "B. & W.," that fifty years ago I was fond of trying experiments with bees, and was only now and then successful; but of late my patience has been exhausted, and I am quite content with bee-keeping in the old-fashioned style; at the same time I may add that "B. & W." has said nothing but what is strictly true of Mr. Woodbury. The latter I hope to see rise like a Phoenix and shine in a prosperous cycle of fine summers, and continue after a long life at the top of the list of the "scientific apiarians" in England; and to "B. & W." and the other

experimental bee-keepers, I only say, Go on in the pursuit of that interesting study. By the way, I strongly recommend to "B. & W." a perusal of the seventh and eighth Volumes of THE COTTAGE GARDENER, where may be read some excellent letters signed "A COUNTRY CURATE," now, I believe, a beneficed clergyman. The "COUNTRY CURATE" was then an experimental bee-keeper and would not allow of many failures. "B. & W." will also find in those Volumes a good many letters from another bee-keeper of the "old school," who continues still to send a few communications to THE JOURNAL OF HORTICULTURE.

BREEDING.—The breeding has been continued in some of my hives up to the 24th of August. On the whole the bee season has certainly been an eccentric one. A swarm of this year of the 28th of May hatched their drones about the 28th June; these were all killed. In the last week in July the hive became so crowded that the bees hung outside. Thinking it too late to put on a super, I allowed them to take their natural course, when one fine gleamy afternoon (29th July), about 2 P.M., they suddenly threw off a swarm; but it was a very small one and being so late not worth hiving; they went into an old weak stock.

ROBBED BEES.—My weakest swarm, hived on the 12th June; a second swarm or "cast," have been attacked by robbers from a distance, as I named in a former communication, but on Monday, August 24th, they were attacked in my absence by several thousands of these marauders and regularly overpowered. On my arrival at three o'clock, the young swarm commenced leaving the hive in a body, the robbers remaining in possession. I destroyed several hundreds of the latter, but the whole of the honey was carried off; and the wasps, which are now numerous, finding that a scramble was going on, assisted the robbers.

WASP-GLASSES.—I have found these very effective. They are advertised in THE JOURNAL OF HORTICULTURE by Messrs. Millington. I put simply brown sugar and water into these glasses, and they are now a quarter full of dead wasps. Not a single bee has been trapped; but if a tyro apiarian put honey or any other luscious liquid into these glasses the bees will be enticed directly.

TWO QUEENS IN ONE HIVE.—We have heard of two "Kings of Brentford," but it is a rare thing to hear of two queens living quietly in the same hive, as described by my worthy friend Mr. Woodbury. Probably the young one described by Mr. Woodbury might have been diseased or barren, at least for a time, and the bees have certainly a quick intuitive discernment of any defect. Place a really disabled bee on the alighting-board of a hive—one of the same bees I mean, of course, and the unfortunate wight is immediately destroyed; but place a poor benumbed one in the same place, although unable to crawl, but sound wind and limb, this bee is allowed to remain and enter the hive as soon as recovered. All real bodily defects are instantly discovered. Of course, all apiarians know that for many days, and even weeks, two and even three queens are frequently allowed during the swarming season in May and June; but in my two uncomb-hives, made purposely for observation, I never discovered but one queen laying eggs, and from seeing the queens so frequently could easily perceive that it was the same bee. This holds good generally from July to April inclusive, as to one queen only.

FOUL BROOD.—This is a disease among bees I have never noticed. It has been so ably discussed by the different writers, that I do not venture to enter the lists in the argument. All I have to say is, that if bees be well looked after, kept clean, not over-ventilated, nor kept too warm, nor confined in cellars, or shut up all the winter, disease will seldom or never attack them. Too much ventilation will prevent breeding and destroy the embryo brood in any weak hive of bees, and hence the hive gets in an unwholesome state. A very small swarm in a large hive seldom prospers.

AGE OF THE QUEEN BEE.—Your correspondent the "HAMPSHIRE BEE-KEEPER," should be referred to former Numbers of THE JOURNAL OF HORTICULTURE. It has been clearly proved that queens sometimes live three years, but I have always considered an old queen detrimental to a hive. Nothing like young blood for breeding and activity. An old queen often attempts an excursion and fails: hence at an unseasonable period of the year ruin comes on the stock.

KILLING DRONES.—I had a hive (a swarm of 1862), which

seemed to be overrun with drones. Whenever the bees are seen issuing out of their hives, collaring the drones or riding on their backs, there is no harm in assisting the bees. This being the case in the hive of mine alluded to in July last, I killed more than three hundred with my own hand, the bees destroyed about one hundred more. A drone-breeding queen is a disadvantage to a hive, particularly in a late season like the present, as I have before mentioned.

HONEYDEW.—Your correspondent "B. & W." seems to doubt the existence of honeydew during the month of July last. It commenced about the 4th and lasted until the 14th. It may be right to mention that the trees affording this exudation were mostly the oak, the beech, and the lime, besides various shrubs, particularly laurels and currant trees. It seldom takes place except in dry hot weather, and not only are the hive bees busy on this sweet exudation, for the *Bombus terrestris* and *B. lucorum*, and one other species of these wild bees are very busy on it too; and during the time it lasts, which is generally a very short period, the finest flowers are deserted and intense activity exists. There was honeydew in 1859, during the intense heat in July of that year, for a few days. The honeydew generally happens once in every four or five years, but sometimes not for seven years. From the year 1837 until 1842 I observed no honeydew; but in the splendid summer of 1842 I was then attracted in the middle of June by the louder humming of the wild bees among the young oaks and beech trees where no flowers or blossoms existed, and on examination I found the leaves of these trees covered with moisture quite sweet to the taste.

STUPEFACATION OF BEES BY FUNGUS.—I never heard of any good being done by this process, as in general one-third of the bees are rendered incapable of working again, and the remainder lose their *esprit du corps*. If all apiarians had the perseverance of Mr. Woodbury, driving would be the best mode of operating when wanted. Mr. Cotton, whose pretty little book I have, stands up for the puff-ball fungus in most of his experiments, and denounces the inhumanity of killing bees, when, strange to say, a little farther on, talking of very weak swarms in the autumn and what to do with them, he says emphatically, "Feed them with a brimstone-match." The "HAMPSHIRE BEE-KEEPER" seems to have been more fortunate in his experiments than many of his "congeners" in fumigation. The county of Hants, take it altogether, is one of the best bee counties in England, and his bees ought to prosper well, particularly if he is within half a mile of heather.

Since writing the above observations I have read the remarks of the "HAMPSHIRE BEE-KEEPER" on honeydew, and they agree with mine, except that it is only in very peculiar seasons that honeydew appears so late as the month of August—once in fifteen or perhaps twenty years—and I have never noted much honey-gathering after the second week in July, except in 1843 and 1863—both rare exceptions. Indeed, in the present year there was more honey gathered in the first three weeks of July than I ever observed in this locality before at the same late period.

I shall conclude my remarks by observing that the summer of 1863 has been better than I ever expected, and I have never observed the honey-gathering and breeding continue so late in this locality as in the present season.—
H. W. NEWMAN, *Hillside, Cheltenham.*

APIARIAN NOTES.

MY APIARY.—A long time has elapsed since I had the pleasure of sending any communication on the subject of "bees" for insertion in the pages of this Journal. To continued ill health during the spring and early part of the summer my silence must be chiefly attributed; but I must confess, that seeing from week to week that there was no lack of correspondence, or of useful and interesting papers on this subject, has made me feel less solicitous on the score of my own deficiency. But while my pen has been idle the bees have not, and their master has had plenty of work to do in managing and directing their labours to advantage.

Having successfully carried every one of my stocks through winter, I found myself the possessor of nineteen stocks in March. In consequence of my Ligurianising efforts of last summer and the great gain upon the population and vigor

of the various colonies necessary in artificial queen-rearing, and substitution of Ligurian for common queens, together with the wretched season we experienced, the majority of my hives were remarkable for weakness rather than strength. Thanks to liberal supplies of artificial food in the previous autumn I found on inspection of the interiors of all my stocks in March, more or less sealed comb in every one. Some were very damp from internal moisture, but seemed little or nothing the worse for it; and these, on the whole, have proved to be my best and most prosperous colonies. From the ten-frame-hives I had in autumn removed a frame on either side, which I think is attended with much advantage both to the combs and the bees. These were wrapped in paper and replaced in the spring. Among the worst colonies in my whole apiary were the only two in straw hives, and these have done little for me the whole summer. These are old stocks, and probably have seen their best days. Two of the weaker lots in frame-boxes were united together, and with manifest advantage. In some the population was very scanty; but owing to the enormous breeding powers of their queens—possessing more or less of pure Ligurian blood—they ultimately became immensely strong, though not able to take full advantage of our first honey harvest in May. Notwithstanding that supers were supplied sufficiently early, several of my hives insisted on swarming; and what is more unfortunate, many swarms from some of my best hives were entirely lost. This is one of the consequences of keeping apiaries away from under the immediate personal care and supervision of the owner. Not a swarm was lost from the one consisting of seven hives attached to my own residence; but the bees in the two detached apiaries could not be always watched, and the loss of many fine swarms was the consequence. What renders this the more vexing is, that at the head of one of these fly-away swarms was a queen which bred the best-coloured Ligurians I had, and from which I fondly hoped to have raised some first-rate Ligurian mothers.

On looking over my note-book I find a few entries which may interest my apiarian friends. It will be best to give an epitome of my various stocks and what they have done. As a rule I have endeavoured to prevent all natural swarming, in spite of which I have had and have lost more swarms from hives so treated than has ever been my experience before.

No. 1. *Frame-hive.*—Artificial Ligurian swarm made on the 1st of June by removing one broodcomb with the queen, bees, and brood. June 15th strengthened by four frames of comb with honey and brood from No. 20. At this time a very promising stock. No honey has been taken.

No. 2. *Octagon Stewarton.*—Has not thriven all the summer, although a fine second swarm from No. 17 was added. I have feared that it is the victim of foul brood, but have not had time to examine it, being kept at a distance. Shall break it up at once if my suspicions prove correct.

No. 3. *Frame-hive.*—A fine Ligurian stock in the spring, but has not come up to anticipations. No swarm. About 22 lbs. of honey in supers taken.

No. 4.—Old stock in flat-topped straw hive, very weak and light in the spring. Uncertain as to whether a swarm flew away from it or not. Gave a nice glass of honey, 20 lbs. weight.

No. 5. *Frame-hive.*—A nice stock (common) in spring—a super put on in proper time—would not work therein, but chose to swarm. First swarm very good and saved. Second, believed to have been lost. No honey taken.

No. 6. *Frame-hive.*—Ligurian. Excessively wet internally when examined in March, populous, and great quantities of brood. Further strengthened by all the bees and some of the brood of adjoining hive No. 24 being united to it. A super put on and partially filled. An enormous swarm, which was saved, issued on July 11th. Honey taken, about 10 lbs.

No. 7. *Adjuster-hive.*—Common bees. In March extremely light, very dirty and wet. Hardly expected to save it; but it worked vigorously. Adjusting-super put on early; a very long time before the bees would construct combs, but have done well since the middle of June. About 35 lbs. of exquisite honey taken. The stock is heavy at the present time.—S. BEVAN FOX, *Essex.*

(To be continued.)

OUR LETTER BOX.

CARRIER PRIZES AT WAKEFIELD POULTRY SHOW.—Mr. J. Frith who was awarded the second prize, lives at "Dewsbury," and not at Halifax.

RED MITES ON CANARIES (W. Adderley).—Fill every crack thoroughly with linseed oil, and dust flowers of sulphur among the feathers of the birds frequently and thoroughly cleaning out the cage is the best preventive of the same.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	SEPT. 28—OCT. 5, 1883.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
29	Tu	MICHAELMAS DAY.	65.2	44.7	54.9	23	58 a 5	48 a 5	28 a 6	41 a 8	16	9 a 35	223
30	W	Ivy flowers.	64.7	43.7	54.2	21	59 5	40 5	1 7	51 9	17	9 54	223
1	Th	Pheasant shooting begins.	62.5	45.0	54.3	18	1 6	38 5	42 7	59 10	18	10 14	274
2	F	W. Speechly died, 1819. G.	61.4	43.7	54.1	17	3 6	36 5	30 8	57 11	19	10 33	275
3	S	Marvel of Peru flowers.	62.7	44.2	54.8	16	5 6	34 5	23 9	48 0	20	10 52	276
4	Sun	18 SUNDAY AFTER TRINITY. [1848.	64.2	43.7	54.9	18	7 6	31 5	20 10	39 1	21	11 10	277
5	M	Cottage Gardener commenced.	63.2	41.4	52.3	18	8 0	29 5	22 11	5 2	22	11 28	278

From observations taken near London during the last thirty-six years, the average day temperature of the week is 64.1°, and its night temperature 43.6°. The greatest heat was 80°, on the 4th, 1859; and the lowest cold, 17°, on the 2nd, 1853. The greatest fall of rain was 1.06 inch.

PLANTING AND SELECTING GRAPE VINES.



8 the questions asked by "A YOUNG GARDENER" are of very general interest, it has been considered desirable to reply to them in a somewhat detailed form; for certainly there never was a time in the history of gardening when so many of limited knowledge and experience were so very commendably invest-

ing their funds and their time in the cultivation of the Grape Vine.

There are excellent works now in print on the subject, and much information has appeared in a periodical form; yet there will always be special cases where sound information connected with Vines and Vine-borders cannot fail to be interesting and useful, as in the case of our young correspondent.

Taking the questions which he has presented in their most natural order, the site on which the border is to rest comes first. The slope, or fall, of 12 inches and the concrete make an excellent beginning, and are indispensable if the subsoil is cold and ungenial to prevent the descent of the roots into a medium, in consequence of which the Vines would soon suffer in one way or the other. But besides the precaution of making an impenetrable bottom, a drain should run parallel with the extreme front of the concreted site and about a foot below its level, and communicating with this main-drain there should be cross ones up to the very back of the vinery if the border extends inside the house. These cross drains may be laid at 5 or 6 feet apart. Then broken bricks or stones should be laid all over the concrete and drains to the depth of, say, 9 inches, finishing off with a stratum of finer material, such as coarse gravel with the sand sifted out of it, so that the soil can never be mixed up with the rubble in the bottom; and if over all a thin turf with the grassy side downwards be laid, so much the better. With these cross drains and open stonework, and a good outlet to the main drain in front, there will never be any fear of stagnant water, against which the simply concreting and sloping the border would not be sufficient precaution.

There is a decided objection to laying a border on a hard concreted surface without any intervening stratum of open material to quickly and thoroughly drain it from all the water which passes through it from the surface.

No. 181.—VOL. V., NEW SERIES.

However turfy and excellent in all respects the soil may be when placed on an impervious surface, the portion of it which rests immediately on the concrete becomes soured and unhealthy in the course of time. When the fibry organic matter has decayed, and the border is reduced to a more solid condition, the water which passes through it to the bottom can never drain away from the latter sufficiently not to be mischievous, even if the slope or fall is much more than that which has been named. In consequence of this the bottom stratum of the border, into which a great portion of the roots will find their way, becomes a soured paste, in which all the young roots will as surely perish as if they were cut off altogether; and by such an accumulation of water the temperature of the border is kept low.

Sufficient, we trust, has been said on this point to warn our correspondent from placing his soil on a hard surface through which water cannot find its way with ease. The amount of draining material which has been recommended will have the additional beneficial result of raising the border more above the surrounding level, which, if the natural soil be cold and clayey, is a matter of considerable importance. It is a great mistake to dig out deep pits for borders, especially if the ground is naturally wet, and much better is it to keep the body of the border well up above the level; and where, from the construction of the vinery, this cannot be done, no pains should be spared in completely cutting off from the border all the water which falls into the ground around it. A good way of doing this is to cut a deep drain all round the border and fill it up to the surface of the ground with open rubble such as brickbats or stones. Unless some such means as this be resorted to, the opener material of which Vine-borders are generally constructed acts as a drain to the ground which surrounds it, and, consequently, it becomes a receiving place for the water that falls around it.

If our correspondent has his border prepared and filled-in during the course of the winter, care should be taken in doing so never to move or interfere with the soil and other ingredients which are to be mixed with it while they are in a wet condition. The moving and mixing of soil, however open and free it may be, while in a wet condition is sure to make it sour and unhealthy; therefore, unless it can be done in a dry and comfortable condition, it is best to defer the operation till spring when there are more chances of dry weather. Of course, if the soil can be laid and mixed under cover of a shed, mixing it can be proceeded with at any time.

Although "A YOUNG GARDENER" does not ask for information as to the sort of material of which his border should consist, it may be well to make a few remarks on this point.

What we consider to be most in harmony with the constitution of the Vine is an open, fibry, calcareous loam taken from a park or common which has not been under cultivation for a length of time, the older and fresher the better. It should be taken about 5 or 6 inches in depth, including the turf or grass which grows on it.

No. 783.—VOL. XXX., OLD SERIES.

This should be chopped up with the spade and about a cart-load of old mortar rubbish added to every eight loads of loam, and to this about 4 cwt. of inch unboiled bones, and a load of thoroughly well-rotted hotbed or horse manure, and it will form what may be termed a first-rate border. Should the loam be more inclined to clay than sand, the amount of lime rubbish should be increased in proportion as the soil is heavy. We have in such a case used charcoal dust, and have also charred a portion of the soil in order to counteract the tendency that clayey loams have to become consolidated, no matter how turfy they are when used.

The number of varieties of Grapes which "A YOUNG GARDENER" proposes to plant in a house only 30 feet long is six. This is certainly quite variety enough, and unless some special object were in view, it would be advisable to have fewer sorts. We should prefer at the most three or four varieties of standard reputation. This is more particularly desirable from the fact that the vinery having an east exposure and not a southern one, and also from the fact that the vinery is to be used for keeping bedding plants for a good many months in the year. Under such circumstances it could scarcely be hoped that Muscats would be ripened, because with all the advantages of a southern aspect, and a high temperature, this fine Grape is in some seasons difficult to ripen. One of the very best sorts is, therefore, excluded. We will, however, name six sorts, as such is desired.

Black Hamburgh, Royal Muscadine, Snow's Muscat Hamburgh, Lady Downes', Raisin de Calabre, and Black Prince. Making a selection of four sorts, we would plant one Royal Muscadine, two Black Hamburghs, two Muscat Hamburghs, and one Lady Downes'.

It is now proved beyond all doubt that Snow's Muscat Hamburgh is one of the finest Grapes ever introduced; and, therefore, even for so limited a collection, two Vines of it are recommended. It is, however, when grafted on the Black Hamburgh that it comes up to its highest pitch; and so treated it can be grown into bunches little short of the Barbarossa in size, even in berry, and under any circumstance its flavour is second to no Grape grown. It has also the great recommendation of ripening perfectly along with such sorts as Black Hamburgh and Lady Downes'; and, therefore, we in this case recommend it in preference to the Muscat of Alexandria in any of its forms for an east aspect; and for a mixed assortment Hamburghs should be planted for stocks to it, and after the stocks have commenced to grow, the Muscat Hamburghs should be inarched on to them, green wood to green, and they will take in a few days comparatively.

As the vinery is to be used for bedding plants, it may be an advantage to delay the planting of the Vines till May instead of March. By so doing, more particularly if they are to be planted inside the house, it may be more freely used for the object of doing the best possible for the plants next spring without being required to study the Vines. Independent of this consideration, we esteem May the best season for planting young Vines. The soil is then higher in temperature and less artificial heat is required, and from the natural impulse of the plants they will make a much stronger and more desirable character of growth than if planted early and stimulated with more artificial heat. Vines are frequently planted much earlier than the time here recommended; but there are special objects in view—such, for instance, as the bringing round of Vines into an early-forcing condition, which it is inferred is not what is intended in the present case. To plant early and allow the roots to remain inactive in a cold wet soil outside, allowing the Vines to come away without much fire heat till they have made a few leaves, is also frequently practised; but there is nothing gained by such a practice, and the Vines will break more strongly in their pots in a cool house, or pit, through the course of the spring, and will be ready to plant by the time the vinery can be supplied with bedding plants, about the middle of May.

Russelia juncea. It was one of the prettiest plants I saw in Mexico. It may be important to its cultivators to know that the plant succeeds best when grown something like an alpine plant. The best specimen I ever saw was on a high peak, no rock being washed on the side. The

look at it there you would think it was impossible that it could obtain any nourishment from the rock and old dead wood that was around it.—E. B. SPENCE, *Nurseryman, Darlington.*

THE AURICULA.

It is sometimes an easier matter to answer the questions of correspondents by simply writing down one's thoughts than to refer them to past numbers and volumes, where the information they desire may be obtained; and hence, as letters both as regards the culture, and names, and descriptions of this pet flower of mine have lately reached me, and as experience somewhat modifies one's own cultivation, I have thought it better to write this short paper than to refer my correspondents to past notices on the subject; and as many things combine to lead me to suppose that it will be a very popular flower, the observations which I am about to make may be of use to others than those from whom I have heard.

As to growth, then. A friend rather pointedly said the other day, "One doesn't grow Auriculas, they grow themselves;" meaning that you cannot drive them as you do some flowers, or even coax them as you may do some others. They grow well, look well, and then all at once they turn their head on one side—a fatal sign. You examine them: there is a species of black rot at the base of the crown "between wind and water," and away goes the plant. Or you have a sort you would like very much to increase. There is no taking off the top shoots, putting them into heat, or any of those nice contrivances whereby Verbenas and the like are multiplied by the thousand. No: you must wait their time. "I have at last had an offset off my wonderful white-edge," writes one of the best growers in the kingdom. One offset! and that a matter of congratulation! Hence, if Auricula-growing has its delights it also has its drawbacks; and one must make up his mind for some of those mishaps which occur in the best regulated families (of Auriculas). After a fair experiment on the subject I have finally determined not to grow them in any larger pots than those which are ordinarily termed 32's. This is contrary, I am aware, to the experience of Dr. Plant; but then we do not expect to grow them as he does, and we cannot afford to lose them as he can with his immense stock of plants. You may probably sometimes obtain finer blooms, but there is a great risk of soddening the soil and rotting the roots by overpotting. In the matter of compost I have also been led to believe that the better plan is to give it tolerably rich both when potting and top-dressing, and thus save the administration of liquid manure save in a very diluted form. An over-stimulation of the plants is, I believe, likely to detract from the quality of the flower and the healthiness of the plant, and is, I am sure, a frequent cause of the black rot.

Some years ago I warmly disputed with a friend, whose well-known signature *Phi*'s used always to gladden Auricula-growers, as to the advisability of shaking off the whole of the soil at the time of repotting, I believing in the old orthodox plan of so doing, he, on the other hand, advocating that a good portion should be left on. I believe his practice, the same as that of Mr. Lightbody, to be the correct one; and I have this year repotted my whole collection in that way. You do not thus keep the same soil from year to year on them; because, as you take away all around the crown of the plant at the time of top-dressing, that which remains when you repot will be replaced the following spring by a fresh supply of the same material. In another point, too, I shall alter my method of growth; but that is more owing to the early period at which the flower shows are held than for any other reason—I mean the place for wintering. I have generally done this in a sheltered portion at the back of a wall facing the north. The consequence was that this spring I had very few of my plants in bloom by the 9th of April. Notwithstanding the exceedingly mild winter with which we were favoured, we are not so much earlier here as I supposed; and hence, although in principle I prefer the plan of not exposing them to much sun, I must this year adopt it, and winter them facing the south, removing them as they come into bloom into the northern aspect where my blooming-stage is.

Thus, then, the method of growth will be as follows:—Let us suppose the plants are now in your possession; and if not, the sooner persons desirous of growing them do possess them the better. They may now be kept in a frame, to which abundance of air is admitted, in some sheltered place facing the north, throwing the lights up on every favourable occasion, but closing them at night, and taking great care that not a drop of rain reaches the plants. Water carefully and frequently, according to the state of the weather, with either rain water or water that has been exposed to the action of the atmosphere. The *Auricula* is a particular flower, resenting ill treatment, and therefore in these little matters requiring care and thoughtfulness. Early in October they should be removed into their winter quarters, which should be in frames facing to the south or south-west, and water should be more sparingly supplied; as the days become shorter, the sun has less power, and the nights are consequently colder. It is well between that time and Christmas to look over the whole collection occasionally, to remove dead leaves, to brush off any aphides that may be on the plants, and to stir the surface soil a little. During all favourable weather air should be freely given; and at night, no matter what the weather may be, they should be carefully covered up. Frigi domo makes about the best covering: it is warm, very durable, and easily managed. The condition of the pots must determine the amount of watering. Some will dry much quicker than others, owing to the pots being fuller of roots, and consequently capable of absorbing more moisture; but in no case allow the soil to become soddened, which is most injurious to the well-being of the plant.

In the first week of February the time for top-dressing will have arrived; and on looking at your plants you will perhaps wonder how you are ever to obtain a bloom from them. Leaf after leaf has been plucked off, and the aspect of the plants has been gradually becoming worse; but if a good heart be there you may look hopefully on. For top-dressing I use simply well-rotted cow-manure two or three years old, and silver sand. Shake off as much of the surface soil as can be done without disturbing the roots: this will be about to the depth of 2 or 3 inches. Replace with the top-dressing, which should have been passed through a sieve, and then gently water with a syringe, taking as much care as possible not to wet the heart of the plants. They will soon begin—after a few waterings, which should be done carefully—to exhibit their sense of the change of diet and treatment. No convalescent from a hospital will do so more than they; and in a month the change is quite wonderful. The trusses will now begin to appear, and the plants may be removed to their blooming-quarters. Where it is practicable a blooming-stage should by all means be erected; and where there is a good collection there ought to be enough to have the blooming-stage well supplied with effective plants. It is well, where the trusses are over-large, to thin out the pips with a sharp-pointed pair of scissors. Not less than seven pips ought ever to be shown in my opinion, and as many more as will consist with the elegance of the truss.

As they go out of bloom, if you do not wish to save seed, pinch off the heads. Be careful about green fly, and leave them in a north aspect until the end of July or beginning of August, then repot. My compost consists of about one-third each of rotted cowdung, loam, and leaf mould, with some silver sand. I do not, as I have said, shake out all the earth, but examine carefully the root. If the tap root is too long I cut it, and rub the cut with charcoal powder. All offsets should be taken off, and if large put singly into pots; if small, round the edge of a pot, three or four as the case may be. Water with a syringe or fine rose, and then return them to their summer quarters to make their second growth. If they show symptoms of blooming pinch off the flower-stem carefully, water sparingly until the roots are beginning to start again, and then proceed as before. With this attention a stock may be kept in good health, saving those occasional mishaps which will occur, and much enjoyment be had in the culture of this exquisitely neat and peculiar flower.—D., Deal.

SPECIMEN FUCHSIAS, AZALEAS, &c., AT THE HOMERTON NURSERY.—The building mania appears to be as destructive to floriculture in the neighbourhood of London as in Paris,

and one after another of the old suburban nurseries are compelled to retire before the genius of the hod and the trowel. I have just seen the announcement of another of these disheartening instances. The Homerton Nurseries (Mr. J. Fry) are to be disposed of unreservedly on the 30th inst., the ground being required for building purposes. A few score of fresh chimneys will, therefore, add their smoke to the difficulties, already more than enough, of floriculture in those parts. I am induced to call the attention of the readers of the Journal to this sale, from the opportunity seldom to be met with, of acquiring plants of unusual size, and of favourite kinds, in specimen Fuchsias, especially standards, large Azaleas, and Camellias, all for *bona fide* disposal. There is also a collection of seedling Fuchsias, never let out, some of them double and novel, well worthy the attention of connoisseurs in such matters.—W. D. PRIOR, Homerton.

HARDY AQUATICS.

(Continued from page 226.)

WITH regard to the plants that are to occupy the aquarium, it rests entirely with taste to say whether it shall be planted with those that have white or yellow flowers only, or with such as afford a variety of colour. It may be white with *Nymphaea alba*, or yellow with *Nuphar lutea*, or many colours by selecting from the list of aquatics to follow. In any way an aquarium cannot be other than an oddity as a centre, but by no means a despicable one; yet it should be planted in accordance with the laws of harmony and contrast. The white Water Lily is second to no aquatic for forming a good centre of white; but the plants in the beds around should have flowers of a different colour, so with yellow, and so on. If the basin be planted with one species only it is not necessary to form it into terraces; but it should be pretty nearly of a regular depth throughout, as much as circumstances will allow. Three feet is deep enough for either of the aforesaid Lilies, and 1 foot 6 inches quite shallow enough. Neither of them appear above water, but their leaves float on the surface, still having one of the florists' highest recommendations—"the flower is borne well up above the foliage." I certainly should plant but one species only, or, if many, such only as would attain their greatest beauty when the remainder of the design was arrayed in splendour.

But we have arranged for plants of different heights, and must find them. Well, here they are in flower-garden order: centre, *Nymphaea alba*, *Hydropeltis purpurea* around it on the first step—the flowers are of a reddish-purple colour—and *Nuphar pumila* at the outside or edge, which will be improved by having *Myosotis caespitosa* planted on the margin of the water all round. It is not necessary to adhere to this arrangement, for there is ample variety of habit and diversity of colour in aquatics, so that by having but one of a species a large number may be grown in a limited space. However, where anything like effect is desired, the basin had best be planted with *Nymphaeas* in collection, *Nuphar*, *Alismas*, &c., for it is difficult to get aquatics to grow as even in height and outline as bedding plants. As far as regards fish in small aquaria, a few gold fish are an embellishment, but fowls have no business in such a place.

A stone basin is a good substitute for a clay-puddled aquarium but by no means equal to it, for the plants derive nourishment from the clay which they can never do from stone; besides, the stone basin is much more expensive than a puddled one. The basin may be formed of cement, which may be done by firmly ramming the bottom after it has been dug to the required width and depth, and it cannot be rammed too hard, and then placing a layer of lime-riddings on the bottom and ramming it as hard as the soil; on this is spread with a trowel a layer of mortar an inch thick, formed of equal parts lime and finely-sifted ashes—the dust that passes through the riddle. This is allowed to dry, and if it has been well-wrought and put on quickly it will not crack. On this again a coat of Roman cement is laid an inch thick, which is formed of cement one half, plaster of Paris a quarter, lime finely sifted a quarter, with sufficient water to make it of the consistency of mortar. Blood instead of the water will render the concrete harder. A cheaper way is to use equal parts of finely-powdered lime and calcined marl, or

Portland cement, with a little sand added, either of which will set as hard as a stone, and be impervious to water; but they should be laid on quickly or they are apt to crack at the joinings. Soil 6 inches thick will be necessary at the bottom of stone or cemented basins for the aquatics to grow in.

Now all ponds or lakes are formed in the manner before named, the only difference being in the size. A lake is simply nothing more than a basin on an extensive scale; but I will pass over the improvement of streams, lakes, and irregular pools of water for the present, and confine myself to the culture of aquatics.

Probably there is nothing so simple in the whole range of ornamental flower-gardening as the cultivation of water plants, there being but two main points to attend to, which are providing a portion of soil for the roots to grow in, and to plant or place them at such a depth below the surface of the water as their size and habit require. Their peculiar natural habits should also be imitated. Those with floating leaves, as *Nymphaeas*, *Nuphars*, and *Villarsias* grow naturally in the deepest parts, whilst such plants as *Caltha* grow on the margin or in shallow water. The smaller kinds require to be but just within the water; whilst some do best when planted on the edge, but still with the roots in close proximity to water, of which *Myosotis* affords examples. Some, nay, the greater part, of the taller-growing kinds require to be planted near the edge in shallow water, as, for instance, the upright-growing grasses and reeds. In planting it is better to distribute them in groups than as single plants at regular distances. Even groups should not be regularly distributed, but disposed with irregularity in threes, or a dozen together, according to the extent of the water. They will thus look all the better. It will not look better to have all the tall-growing in one part, and the small in another; but the contrary. The smaller kinds will look better where the bank is broken by shrubs; and the taller kinds may be made to serve to distinguish between the shrubs on land and the water plants by placing them where the bank is unclothed. As a rule tall-growing kinds ought not to be planted where the bank is a dense mass of foliage, or the outline of the water will be destroyed; nor the smaller kinds where they cannot be seen and examined. Where, however, the bank projects and is clothed with trees or shrubs, advantage should be taken to plant a group of the taller kinds in as great a number and as much variety of foliage as may be consistent with the plants on land. The inlets should be planted with the lesser kinds, those that appear much above water being excluded, except one here and there to fix or attract the eye, or the smaller ones might remain unnoticed.

Plants with floating leaves as a rule ought to occupy the deepest parts of the water; and as they are much less numerous than those growing in shallow water, groups of one species where the water is extensive, or of one genus when it is small, should be planted in one place. Even then they should not occupy the whole of the midwater, but with a broad channel between and distant from group to group they would appear as verdant floating islands, which, when arrayed in their summer dress, with their gorgeous white and golden flowers peeping from the watery surface, will be highly picturesque. If the plants be artistically disposed a lake will have much of the appearance of an old-fashioned flower garden, the tall-growing aquatics in groups being the shrubs, the large species the single specimen shrubs, whilst the floating species will represent the gorgeous masses of one colour or beds; water taking the place of the lawn.

Where basins or small pools already exist that have no steps or terraces to accommodate plants that require to be placed at different depths, half-inch iron rods, with a loop at one end so as to hold a flower-pot, bent so as to be the required depth below the surface of the water, and fixed firmly in the bank, will do much towards growing a greater variety of plants, and if the iron be galvanised they will last a long time.

A goodly amount of soil, mud rather, being all we want for these plants, I have only to consider how it is to be given. For large pools it is best given at the bottom of the water, whilst for basins and small pools the plants had better be in the water.

at least 6 inches of soil to grow in. *Nymphaeas* even may be grown in pots, but not so well as when planted out.

Stiff loam alone is suitable for all the floating species and tall-growing kinds; but the others require vegetable earth, peat, leaf mould or bog soil one-fourth, strong loam half, and coarse gravel one-fourth; 6 inches is not too much for the taller species to grow in, but 3 inches will do for the smaller kinds. In assigning the plants to their places in basins of water regard should be had to effect, unless collection be wished for, when, of course, effect is not the object aimed at; but the depth each species requires to be in the water must be borne in mind at the time of planting.

Aquatics are best planted in the spring, for then they have a good opportunity to establish themselves during summer. The best mode of planting is to fasten a ball of strong loam round their roots, and drop them gently into the water at the desired place. Should the loam be of a friable nature, a large or small stone in proportion to the size of the plant must be fastened to the root in addition to the soil, or the plant will rise owing to the soil falling in the water. Those that require to be planted on the margin can easily be placed in the mud with the hand.

Water plants are propagated by division of the root and from seeds.

Division is simply parting an old root, or taking off the offsets. Such species as emit roots from the stem or have stems floating beneath the water may be increased by putting in cuttings of the stems. An excellent plan for striking aquatic cuttings and raising from seed is to have a shallow stone basin, any size, about a foot deep, with a hole to let off the water and a tap to fill it; the bottom to be covered with 3 inches thick of stones and about 3 inches of soil—i.e., peat and loam in equal parts laid on the stones—it is then filled with soft or rain water. In this trough cuttings of the creeping kinds are planted, and seeds of the floating species are dropped into it. In this they can remain until of sufficient size to plant in their final quarters, when the water can be let off, and a fresh planting take place. Cuttings are best put in in March, and seeds as soon as they are ripe.

For the kinds growing on the margin, or what are, properly speaking, marsh plants, the trough will require to be full of soil to within an inch or so of the brim, covering the surface with a thin layer of moss. Saturate with water, and keep the whole well saturated afterwards. Offsets can be planted in March, putting them with their roots just beneath the moss, and seeds may be sown on the surface immediately after they are ripe. The seeds will vegetate more freely when the moss becomes decayed.

When the plants are large enough to transplant they may be transferred to where they are to remain, moving them with a ball of earth adhering to the roots; for although placed in the water yet a ball of earth is of as much moment to them as in planting any other plant, success being more certain with a ball than without. For small basins the plants are handier in pots, especially the smaller kinds, potting them in the compost already mentioned like any other plant, and placing a stone on the surface of the mould to prevent the plant being displaced. The tender kinds are best in pots, for then they can readily be removed to shelter on the approach of severe weather. The following list contains most of the ornamental species, a great many bog plants being excluded, as they are mostly inconspicuous in their flowers, though ornamental in other respects.

NYPHÆA (Water Lily).—The queen of hardy aquatics is *Nymphaea alba*, flowering from June to August, white, with cordate leaves floating on the surface; Britain; Rivers, &c. *N. canadensis*, from Canada; similar to, if not identical with, the foregoing. *N. reniformis*, flowering from June to September; from Carolina. *N. odorata* (Sweet-scented), flowering in July and August; North America. *N. minor* (Smaller), flowers white, in July; North America. *N. pygmaea* (Pigmy), has white flowers, produced from May to September; China. *N. nitida* (Shining Cap-flowered), from Siberia; white flowers, produced in July and August. All are perennials, increased by division of the root.

NUPHAR.—*N. lutea* inhabits pools and sluggish streams; a native plant; flowers yellow, appearing in June and July. *N. pumila* (Dwarf Yellow), flowers in July and August; found in the Scotch lakes. *N. advena* (Stranger), a North American species, has yellow flowers in July and August.

N. Kalmiana (Kalm's), from Canada; flowers yellow, in July and August. *N. sagittifolia* (Arrow-leaved), has yellow flowers, from June to September. All are floating perennials, closely allied to the *Nymphæas*.

VILLARSIA.—*V. nymphæoides* (Water-Lily-like), a highly ornamental floating aquatic, with heart-shaped leaves, has umbels of yellow flowers, produced in profusion in June and July; England; found in rivers. *V. cordata*, a North American species, with cordate floating leaves, having yellow flowers in June and July. *V. ovata*, from the Cape of Good Hope, with ovate floating leaves, has orange flowers from May to July. *V. lacunosa*, from North America; has white flowers in June and July. The last two are half-hardy perennials, requiring the protection of a greenhouse in winter. *V. reniformis* (Kidney-leaved), *V. sarmentosa*, and *V. parnassifolia* (Parnassia-leaved), are evergreen, half-hardy perennials, from the bogs of New Holland, with yellow flowers, which are produced in profusion in July and August. They grow 1 foot high, except *V. parnassifolia*, which attains 2 feet, and flowers from June to October. The last three require to be taken up on the approach of frost, and to be planted or plunged in pots on the margin of the water out-doors in June.

RICHARDIA.—*R. æthiopica* is a charming evergreen perennial, growing 3 feet high, with white flowers; from the Cape of Good Hope. Much grown by cottagers in their windows, and mostly grown in a greenhouse, but quite hardy if planted under water beyond the reach of frost. *R. albo-maculata*, highly ornamental foliage, suitable for water-basins from May to October. Requires greenhouse protection in winter.

CALLA.—*C. palustris* (Marsh), from North America, has cordate leaves, and inconspicuous though white flowers in July and August. A perennial growing half a foot high.

ALISMA (Water Plantain).—All are upright-growing perennials, producing flowers in open whorls, branching more or less. *A. plantago* (Plantain), has white flowers marked with purple, growing 1 to 2 feet high; Britain; in pools. *A. parviflora* (Small-flowered), growing a foot high, has white flowers in July and August. *A. trivialis* (Trivial), grows 1½ foot high, having white flowers in June and July. This with *A. parviflora* are from North America. *A. natans* is a floating Welsh plant, with white flowers in July and August; it grows 6 inches high. *A. repens* is also a Welsh plant, growing from 6 inches to a foot high, having white flowers tinged with rosy purple in July and August. *A. lanceolata*, found in British pools, grows 1½ foot high, with spear or lance-shaped leaves; it has white flowers shaded with purple in July and August. *A. ranunculoides*, another native species, grows about 6 inches high, having purple flowers in August; it inhabits turf bogs, and is a pretty plant. *A. parnassifolia* is a pretty, half-hardy aquatic from Italy, having white flowers opening in July; it grows 6 inches high.—G. ABBEY.

(To be continued.)

SOME GARDENS WORTH SEEING NEAR WARRINGTON, LANCASHIRE.

I give you the names of a few gardens in this neighbourhood, also the names of the gardeners:—

Name.	Proprietor.	Gardener.	Station.
Winwick Hall	Rev. F. G. Hopwood	Mr. Campbell	Newton Bridge
Appleton Hall	T. Lyon, Esq.	Mr. Jenkins	Warrington
Bank Hall	Col. Wilson Patten, M.P.	Mr. Green	Bank Quay
Thelwall Hall	J. Nicholson, Esq.	Mr. Brownell	Thelwall
Bold Hall	Unknown	Unknown	Warrington
Orford Hall	J. Lytton, Esq.	Mr. Reddish	Warrington
Bewsey Hall	Lord Lilford	Mr. Bishop	Warrington
New Hall	Sir Robert Gerard	Unknown	Newton Bridge
Haydock Grange	J. Evans, Esq.	Mr. Bailey	Newton Bridge
Keyton Hall	R. Dewhurst, Esq.	Unknown	
Culcheth Hall	T. E. Whittington, Esq.	Unknown	
Creswell Hall	T. Parr, Esq.	Unknown	
Newton Priory	G. McCracken, Esq.	Unknown	Newton Bridge

I will collect the names of some other establishments and give you them shortly.—R. SMITH.

COCKCHAFFERS.—More than 12,000,000 cockchafers have been destroyed this year in the canton of Bâle, in Switzerland. The amount paid by the authorities as premiums for their destruction has exceeded 1000*l*.—(The Building News.)

CALCEOLARIA CUTTINGS.

A MONTH since I took a lot of cuttings three joints long, put them round seven-inch pots in some loam from rotted turves, with a good lot of sand added. The cuttings are all alive at present, but none rooted, although they look well. Where am I wrong? The pots are in a Cucumber-frame.—A. A.

[We do not think you are wrong at all, except in placing the pots in a Cucumber-frame, if there is any or much heat in it. A cold frame would have been better. Do not attempt to hurry them. Let them have their six weeks or ten weeks to root if they like, the longer the better, provided the cuttings keep fresh. Keep your eye on "Doings of the Week." Mr. Fish is quite satisfied if his cuttings strike by Christmas. Just keep them green and all is right.]

KENSINGTON PALACE GARDENS AND HYDE PARK.

KENSINGTON PALACE is an irregular brick edifice of no architectural pretensions, badly placed in relation to the surrounding gardens, being lower than the greater part of their surface. The front of the Palace is to the east, with wings stretching westward, and then north and south. On the south is the lawn with flower-beds. Being bounded on the north and west by the Palace, the beds furnish three sides of the square; but a broad walk runs along the eastern side of the square to the windows of the Palace, which is an anomaly in architecture, without a hall or front door. The broad walk on the east side is furnished with flower-beds at each side; altogether it is a most incongruous piece of flower garden. It will require a clever artist to reconcile that part of the garden with the architecture of the Palace and its two side ranges of buildings.

The gardens are three miles and a half in circumference, and contain a circular basin, near the Palace, with three straight avenues diverging to three different points eastward. Two main gravel walks, each half a mile long and 21 yards wide, intersect these beautiful pleasure grounds from north-west to south-east with a broad, circumferential walk, and other gravel walks of communication to different parts of these thickly-wooded and extensive landscape scenes. One of the broad walks is very improperly terminated in front of the boundary railing on the Kensington road. The trees in some parts of the grounds have been planted in masses of a sort, in other parts they are gathered into thick groves of mixed kinds, and intersected by long straight avenues from different points. During the reign of George II. Queen Caroline formed what is called the Serpentine river by uniting several ponds. This was the first bold attempt to deviate from the straight line, and to give that beautiful variety of outline now so generally admired in the windings of a river. We were rather disposed to find fault with the meagre manner in which the long walk on the south-east side of the garden is planted. It affords length and breadth for a splendid ribbon-border on each side; but when we reached Stanhope Gate and saw the long vistas of flowering-beds and borders parallel with Park Lane, we became more reconciled to the state of things in Kensington Gardens.

Proceeding from Stanhope Gate to the Marble Arch, the first bed, an oblong, is *Cerise Unique* Geranium, edged with *Lebelia speciosa* and variegated Mint alternately; the opposite bed, *Imperial Crimson* Nosegay Geranium, then *Purple King* Verbena, edged with *Cerastium tomentosum*. Second bed, three rows of *Christine* Geranium, then white Ivy-leaved Geranium, edged with *Cerastium*; the opposite bed *Boule de Feu* Geranium, then *Purple King* Verbena, edged with *Cerastium*. Third bed, *Trentham* Rose Geranium, then *Mangles' Variegated* Geranium, with an edging of *Cerastium*; the opposite bed, *Punch* Geranium, then *Purple King* Verbena, edged with *Cerastium*. Fourth bed, *Anthony Lamotte* Geranium, then *Bijou*, edged with *Cerastium*; the opposite, *Stella* Nosegay Geranium, then *Purple King* Verbena, edged with *Cerastium*. Fifth bed, *Imperial Crimson* Nosegay Geranium, then *Madame Vaucher* Geranium, edged with *Cerastium*; the opposite, *Prince of Orange* Calceolaria, then *Purple King* Verbena, edged with *Cerastium*. Sixth bed, *Anthony Lamotte* Geranium, edged with *Bijou*.

Geranium, edged with Cerastium; opposite bed, Calceolaria Aurea floribunda, then Purple King Verbena, edged with Cerastium. Seventh bed, Imperial Crimson Geranium, then Madame Vancher Geranium, edged with Cerastium; opposite, Imperial Crimson Geranium, then Purple King Verbena, edged with Cerastium. Eighth bed, Trentham Rose Geranium, then Bijou Geranium, edged with Cerastium; opposite, Général Pélissier Geranium, then Purple King Verbena, edged with Cerastium. Ninth bed, Christine Geranium, then white Ivy-leaved Geranium, edged with Cerastium; opposite, Cerise Unique Geranium, then Purple King Verbena, edged with Cerastium. Tenth bed, Cerise Unique Geranium, then Purple King Verbena, edged with Cerastium and variegated Mint alternately; opposite, Imperial Crimson Geranium, then Purple King Verbena, edged with Cerastium.

The next scene is a border at each side, with a Holly hedge in the centre; the north side backed by shrubs. The back row at each side is Perilla nankinensis, then Calceolaria rugosa, then two rows of Punch Geranium, then Purple King Verbena, edged with variegated Mint. The next is a row of double white Feverfew at back, then two rows of Punch Geranium, then a row of Heliotrope Miss Nightingale, edged with Scarlet Nasturtium.

The centre of the next compartment is planted with Dahlias, with Aucuba japonica in front at one side, and on the other side backed by shrubs; the back row at each side is Purple Orach, which is now faded, then two rows of Ageratum mexicanum, then two rows of Lord Raglan Verbena, edged with dark-flowered Nasturtium.

The fourth compartment is furnished with Perilla nankinensis at back, then two rows of Bijou Geranium, then two rows of Verbenas Ariosto and Mrs. Holford, edged with a broad band of Gazania splendens in full bloom.

The fifth compartment is backed by a row of Perilla, then two rows of Prince of Orange Calceolaria, then two rows of Stella Nosegay Geranium, edged with two rows of Lobelia speciosa and variegated Mint, plant for plant alternately, and a very dressy appearance the edging has.

On the west side of the compartment facing the Park is a magnificent ribbon-border 400 yards long by 5 yards wide. At the back is a row of Privet, then a row of Dahlias overtopping a row of handsome Aucuba japonica, then a row of Perilla nankinensis, then a row of yellow Calceolaria rugosa, then two splendid rows of Punch Geranium, then Purple King Verbena, edged with variegated Mint.

Having passed the Park Lodge the next scene which presents itself is a strip of pleasure ground extending to the Marble Arch. The first bed is a circle planted with Coleus Verschaffelti, which looks shabby in comparison with the plants at Battersea Park. Another circle is planted with Verbena Lady Palmerston, edged with Cerastium; then an oblong bed of Minnie Geranium, edged with Lobelia speciosa; then a circle bed of Trentham Rose Geranium; then an oblong filled with Cannas and Ricinus communis (Castor-oil-plant or Palma Christi), conspicuous for their fine foliage; and an oblong bed of Prince Albert Petunia, edged with Cerastium. In the next department are two circular beds of Tropæolum elegans; an oblong bed of Punch Geranium, edged with Bijou Geranium; and the opposite bed, Punch Geranium, edged with Heliotrope Miss Nightingale; then two circles of Lord Raglan Verbena, edged with Cerastium, and two oblong beds of Canna indica. In the next scene are two circles of Lord Raglan Verbena, edged with Cerastium; an oblong of Punch Geranium, edged with Heliotrope Miss Nightingale; and the opposite, Punch Geranium, edged with Bijou Geranium; then two circles of Tropæolum elegans. In the last department are six circles furnished with Nasturtiums, which were dignified with the names of Tropæolum Pet, T. Eyebright, and T. Aurora at the Royal Horticultural Show on the 9th inst. The leaves may be useful in salads as a substitute for Cress, but to approach anything like an ornamental effect frequent attention must be given to the removal of the leaves. The four circles planted with Heliotrope Miss Nightingale are in full feather.

A bed of Wigandia caracasana is conspicuous beside the ride near Hyde Park Corner. In the height of the London season portions of the Park bounding the ride are furnished with chairs. It is amusing to see the movements of our winter guests, as they sit themselves leisurely down on the

chairs until they see a gentleman at a short distance stretching out his leg and thrusting his hand into his breeches-pocket, who deposits something in the hand of the young man standing before him. The hint is sufficient, the seats are silently vacated, and it is then that the following notices, nailed to the young trees in the immediate neighbourhood, are visible. "The charge for the hire of chairs is not to exceed 2d. for each arm-chair, and 1d. for each common chair. The collector on receiving payment for the hire of a chair to deliver a ticket, which will be available for the day on which it is issued for any chair of the same description. The charge for season tickets is not to exceed 7s. for an arm-chair and 5s. for a common chair. Office, H.M. Works," &c.

WILLIAM KEANE.

HOT-WATER TANKS.

I THINK if "A COUNTRY CURATE" would procure a slate tank he would find it the most serviceable kind he could have, and the cheapest in the end. I have worn out two wooden tanks, and am convinced if I had only had one of slate in the first instance I should not have needed another at all. The slate is about an inch in thickness; the sides and ends are grooved into the bottom, and it is fastened together with screw-bolts and nuts. I make a loose wooden frame all round the inside, and a strip of wood on edge the height of the frame runs down the middle nearly to the end, so that the water can pass freely round. This is to support some slate of the ordinary thickness on which the plunging material (I use sand) is placed. The tank is then complete. A little strip of wood across the most convenient corner of the wooden frame is required to provide for the supply of water to the tank, and the opening can be closed with a small lid or plug. A slater who is accustomed to make baths would have all the materials ready to hand, and would make the tank either for so much per gallon, or, if the size were stated, he would charge so much for the material and the labour. There is not much difference in the cost of a small tank; but I think a large one would be cheapest if procured after the latter mode.—J. R. JESSOP.

GLADIOLUS DISEASE AND NAME.

A LIGHT soil does not confer immunity from disease, as Mr. Cattell, of Westerham, could tell "D." of Deal.

I imagine that Gladiolus is pronounced Gladee'ulus or Glad'y'ulus according to accent, and not to quantity. Nutricula is surely nutrit'ula. Puteoli is pute'oli. Does "D." wish the accent to fall on the last syllable "lus?"

The following rule is given in the preface to Edwards's "Latin Grammar":—"If the penult or last syllable but one be long, the accent is on it; but if the penult be short, the accent is on the antepenult, or last syllable." The antepenult is the third syllable from the end.—S. D. S.

LARGE SALE OF CHINESE AND JAPANESE PLANTS.—A large and important sale of plants from China and Japan is announced for sale by auction by Mr. J. C. Stevens, at his great rooms, 38, King Street, Covent Garden. They have been introduced to this country by the well-known traveller and author, Mr. Robert Fortune, and have been cultivated and propagated by Mr. Standish, in his nursery at Bagshot. Amongst those from China are the Abies Kämpferi, or Golden Pine of the Chinese, a noble timber tree of great beauty; a fine evergreen Yew named Torreya grandis; a hardy Palm which may be seen growing in the open air in Kew Gardens, and finer still, we believe, in Her Majesty's garden at Osborne. There are also some strange-looking Pine trees brought from the country about Peking. Many of these plants have been discovered in districts far inland which are not visited by foreigners, and such plants are not likely to be again sent to Europe. The trees and shrubs from Japan are also of great interest. The curtain which has been drawn round the capital of that country for so many centuries was lifted for a brief space, and enabled us to see a high state of cultivation in so far as gardening is concerned. Here Mr. Fortune found nurseries on a very extensive scale, filled with new shrubs and trees of great

interest, both in an ornamental and useful point of view. Amongst those introduced to Europe we may instance the curious Umbrella Pine and various trees allied to the common Arbor Vitæ, but quite distinct from it. There are also a variegated Honeysuckle, some shrubs resembling our Holly, but in reality nearer to the Olive, new Chrysanthemums, and a host of other things. Curious enough, the Japanese seem to have had a taste for variegated plants long before that taste gained ground amongst ourselves. The Yedo gardens were found full of such plants. There was a variegated variety of Palm, of the Camellia, and even the Tea plant was met with in this condition. Many of these things have been exhibited at the horticultural exhibition, and are no doubt familiar to our readers. Mr. Fortune seems to have visited Japan at the right time, for now the gardens at Yedo which supplied all these interesting novelties are closed to foreigners, and are likely to be so for some time to come.

MUSCAT GRAPES.

I am much obliged to Mr. Thomson for his answer to my letter. By the last sentence I see he is of my opinion—that the question is deserving of more attention than it has received; and by the kind manner in which you have noticed my communication, I am encouraged to send you what I know of the subject, hoping I may assist in eliciting something useful.

I have before me a French catalogue, in which the Vines are classed as *très précoce*, *précoce*, *ordinaire*, *tardif*, and *très tardif*, in which latter class I find the Muscat of Alexandria.

I asked this firm if I might place confidence in these qualifications, and was assured I might. "Then, how were they obtained?" "From the latitude of Paris, and from the open wall." "But this Muscat of Alexandria is marked *très gros*?" "That was from a hothouse." "Do you think these other Muscats and Chasselas marked *moyen*," when grown on the open wall, will improve in size if planted in a hothouse?" "No doubt some of them were capable of great amelioration, they had no information which of them." So for my amusement I bought some to try if they were capable of amelioration, but I never doubted their earliness.

I planted them in front of the permanent Vines in a house where there was bottom heat, and grew them a year before fruiting them. I found they were not much improved in size, at least, they were too small to be worth growing after I ascertained they were not more than two weeks earlier than the latest Vine in the house. In the front row I had Muscats Blanc Hâtif, Noir de Jura, de Meurthe, Ingram's, Trovère, Buckland Sweetwater; Chasselas Musque; Chasselas Blanc, Supérieur; Negrepoint, and Rose or Royal: for the permanent ones, Alexandria, Canon Hall, and Bowood Muscats. I have pulled them all out but Muscat Blanc Hâtif, that did not fruit, and is in front of a weak Vine which I intend to cut down again. I was sorry I could not try them another year, but the permanent ones required the room. If, then, with Vines, we choose the finest, and make them early, will doing so have the same effect on Peach trees? I trust there are among those who with so much ability supply the tables of the great with all that is out of season, that can either confirm Mr. Thomson and myself, or else explain where our error is.—G. H.

CONTRAST VERSUS SHADING—AMARANTHUS BICOLOR AND TRICOLOR.

We agree with "AN AMATEUR" whilst criticising the bedding-out at the Crystal Palace this season, that contrast is the real giver of effect and not shading.

This latter certainly has its distinct merits, as also admirers—indeed it may be that the best-instructed eye would favour shading; that an artist who had made the harmony of colours—these in all their variations, even to the most neutral ones—his chief study, would find greater pleasure therein than when looking at the best and most tastefully laid-out gardens where contrast is the main feature in its arrangement. We admit, also, that it is far easier to give striking effect by the use of the most distinct colours

as applied by contrast than it is to attempt to cope with the numberless neutral colours within our reach by shading and the felicitous admixture of one colour with another of the same hue, yet differently tinted.

What gives us so great pleasure when one of Flora's most favoured band is placed before us, we need scarcely say is the evenly-balanced markings; we cannot err in our attempt to copy these types of real beauty from the hands of so unerring a master. Then let us not reject an attempt so seemingly legitimate, without a fair and well-studied attempt at its furtherance. As we have already intimated, the mode of shading as practised at some of our leading places, ill agrees with our ideas as regards the same; as with some of our most gorgeous flowers we would place the quietest neutral where it could the more readily give effect to the warmer colour. An instance we give below, which has an excellent effect.

Shades of scarlet, Verbenas planted, plant for plant—Fire Fly, Robinson's Defiance, Admiral Dundas, and Lord Raglan; or, again, Tropæolum Elegans, Ball of Fire, Garibaldi, and it may be Eclipse. In the same way with Geraniums, a good effect may be attained by planting alternately, Christine, and Variegated Flower of the Day, which may be edged with Fairy. Or to have an effective lilac bed with shadings, plant alternately Variegated Mint (*Mentha rotundifolia variegata*), and distinct pink, approaching crimson at the eye. These we might continue to a further length, but we have in view two plants which, as we have already suggested in these pages, should be brought more prominently forward in the variegated-foliage class, and which in their markings may read a lesson to any one upon both the subject of shading and harmony of colours. They are not by any means new, though little used. We allude to the *Amaranthus bicolor* and *tricolor*, which when well grown are exceedingly pretty. In their first stage of growth they are not unlike indistinctly-coloured *Amaranthus melancholicus ruber*. Like them also they have a great tendency to run straight up with but one stem. They look, perhaps, best so when not required more dwarfed in form.

When the plants have attained their growth, and previous to flowering, a number of very beautiful lateral leaves shoot out from the main stems all round, in form and size not unlike the bracts upon the Poinsettia. These are upon bicolor a light pleasing scarlet; those upon tricolor being a glowing variation of bright scarlet and yellow, not unlike in their markings the gayest Parrot Tulip. The larger leaves, which hang sufficiently away to admit of their being readily seen, enhance their appearance, by their dark colour, especially when in sunshine they are moved by a slight wind, peeping forth alternately from deep shade to sunshine.

An excellent effect may be attained by forming a centre (a tall upright one being chosen for the middle) in a well-planted bed of *Coleus Verschaffelti*, especially if a large one, and where the centre could be planted in size sufficient to give it as a central object distinct prominence. It is also of a height rather in requisition for a back row, where ribbon-bordering is done well, or for pots for summer and early winter decoration.

But, to return to the *Coleus Verschaffelti*. We have taken up and potted recently some fine plants, unsurpassed by any in colour, the same were planted out as mere cuttings previous to the frost of about the 20th of May last. We are fully aware that the success has been very variable, taking the country through, but we ask yet another trial based upon the experience gained by the past season.—WILLIAM EARLEY.

HARDY AQUATICS.

MENYANTHES *nymphæoides*, *Stratiotes aloides*, *Hydrocharis morsus-ranæ*, *Sagittaria sagittifolia*, *Menyanthes trifoliata*, *Acorus calamus*, **Epilobium angustifolium*, **E. hirsutum*, **Lythrum salicaria*, **Eupatorium cannabinum*, **Osmunda regalis*, and **Valeriana officinalis*.

A combination of the *Typhas* and *Rumex hydrolapathum* (a handsome oriental-looking plant), with some of the minor-growing "borderers," is very effective. The *Osmunda*

*These as "borderers."

will grow fine if it can have peat or spongy soil, and is not planted actually in the water.

If it will avail "L. R." to know where any of the above are to be found in Cheshire, I shall be happy to tell him, but I do not know any nurseryman who keeps such plants. —K.

CULTIVATION OF HEATHS.

(Concluded from page 228.)

WATERING at the right time and in a proper manner I consider essential to the successful culture of Heaths; but then if the plants are potted with the soil and in the manner I have described, there is less chance of giving them too much or too little. The soil absorbs a certain amount of water, the rest drains away, and what the soil retains will never stagnate, for a healthy plant will gradually appropriate it; and if by chance water should be withheld until the soil becomes dry, its free open nature will soon allow it to percolate through. A Heath seldom requires water immediately after potting, and sometimes it may remain a week or two, supposing it to be in the winter, for I follow no rule as regards the time of the year in potting; but when a plant is watered for the first time after potting, it should be done thoroughly, so as to wet the mass of soil through, and this cannot very well be done without filling up the pot three or four times. This is invariably my practice, for I find that if the soil is not properly moistened at the first watering after potting, it never becomes so afterwards, and plants have often died in consequence. After this, when the plants want water, filling up once will be sufficient. A practised eye can tell at once when a plant wants water; but few good growers ever trust their eyes only, but generally ring the pot and feel the soil in addition. At the first watering after potting, I generally use a fine rose, but afterwards merely pour the water on the soil from the spout of the watering-pot. During the summer, and while in flower, Heaths require a great deal of water; but in the winter, and while at rest, they may be allowed to become all but dry, for a Heath may appear very dry, and even flag, when a watering will cause it to expand and pick up again; but when a plant shows signs of distress from over-watering, it is mostly in a dying state, and will be hard to recover, even if that be possible; but there is little fear of over-watering provided the soil is free and open, and the drainage perfect.

SUMMER TREATMENT.—About the beginning of May, the more hardy sorts, as *gracilis* and *Willmorei*, may be set entirely out of doors, if the soil is free, and the drainage good, and they are placed on a good bed of ashes, on boards, or bricks, or in any way so that worms cannot get into the pots, and they will take no hurt until about Michaelmas if they are merely watered as required. But for choicer sorts no place can be better than a brick-built pit, having a good slope or pitch to prevent the possibility of drip from the glass. Pull the lights entirely off on all favourable occasions, putting them on in wet weather, and on bright sunny days, and adding a slight shade, but tilt the lights at the side, and keep neither lights nor shades on longer than is necessary to protect from rain or too bright sunshine. They are sometimes stood in a shady place without covering. In this case they must be turned on their sides, should heavy rains occur; but if left too long in that position they are apt to turn the points of the shoots upwards, which puts them out of shape. In my younger days I have been called up in the middle of the night to turn down a lot of specimen Heaths, and other plants. This is no joke; and although I would rather do it now than allow favourite plants to become injured or killed, still I would rather evade the necessity of doing so, or of giving others the trouble by putting the plants in a place where they would be safe from injury from drenching rains. In places where there are plenty of hands to run and shut up pits, frames, &c., or turn down plants, there is less chance of accident; but in most places this is not the case, and it becomes necessary to avoid such running about, which breaks into the day's work more than lookers-on would suppose. And if plants are to be kept under cover, it must be where they can have fresh air night and day, and not be smothered by other plants.

THESE THINGS BEING DONE, THE PLANTS WILL BE IN A STATE TO BE

supposing the plants to have been freely exposed, care should be taken to give them all the fresh air that can be admitted to them, for under no circumstances will they thrive and do well in a close or confined atmosphere. Keep them cool, and rather dry than otherwise, and never attempt to hurry them into growth. I should have said that after about the middle of August, the more sun the plants have the better, as this will harden the wood, and induce them to flower better. In the autumn and winter mildew sometimes attacks the Heath, but rarely have I had plants troubled with it, as good drainage, a free open soil, and plenty of exposure to the air, will prevent it, and if it has made its appearance a dusting of sulphur will cure it. Heaths are also sometimes infested with scale, but this is only when they become potbound, or are crowded too much in the wood, or are placed too closely together. This pest is difficult to eradicate if it happen to get ahead, but strong soapy water rubbed on with a sponge or soft brush will destroy the insects. Some of the softer-wooded kinds are sometimes troubled with green fly, which is easily destroyed by fumigation. But, generally speaking, Heaths are very clean in their growth, and if kept in good condition will give the cultivator very little trouble as regards pests of any kind. This I consider a great recommendation to their cultivation.

THE TRAINING of Heaths not only requires both skill and judgment, but it is an art acquired only by practice. A well-grown and well-trained Heath is one of the most beautiful productions of the plant department that can well be conceived. To grow and train one as it should be requires no mean display of skilful handling. There should be few sticks, and those thin and tapering, and painted green to match the foliage. The bast matting should be good, and used very thin. I greatly dislike using thread, as some make a practice of doing. The shoots should be trained-in at regular distances, at the same time giving the whole plant a natural and easy appearance. But those who know how to train a Heath will not want telling, and those who do not, will learn more by practice than from description. Men who have to use heavy tools can seldom train these plants well, and this is often exemplified in the specimens produced in many places, and which exhibit a countless host of sticks, and an appearance the opposite of easy or graceful. A Heath to look well should have the pot proportioned to the size of the plant, and be trained in such a manner that the eye is not attracted by the sticks.

THE PROPAGATION of Heaths is not generally a part of the duties of the gardener, very few gardeners can spare the time necessary, or have a suitable place in which to strike Heaths. Propagators of Heaths and other hardwooded plants must undergo a certain training in order to qualify them for the work, and when they become competent they generally command good wages. Propagating such plants is an art, and, according to the division of labour it should be left to those who have studied the art, and certainly those who are unacquainted with it must not suppose it is equivalent to striking cuttings of Geraniums and bedding-out plants. Some kinds of Heaths will take from six to nine months from the time of putting in the cuttings till these become rooted, and some hardwooded plants will take twelve months, and all this time they require daily attention in wiping the glasses, shading, &c. I simply mention this, so that those who may be unacquainted with the process may be prepared for what they have to do should they make the attempt. I have struck various kinds of Heaths more for amusement than anything else, and in five years' time have had plants which I consider repaid all the time and attention they required. "This is a long time to wait," many will say. True, but then the time comes at last, and it must be remembered that there are propagators now engaged in putting in cuttings of Heaths that in three or four years' time will make small flowering plants. The process I have followed is to fill two or three pots of a suitable size about three parts full of drainage broken rather small, then a layer of peat fibre, then a mixture of peat and silver sand, then half an inch of well-washed silver sand, the whole well watered. The cuttings are small shoots about an inch long, taken as near the collar of the plant as possible and the lower leaves stripped off. They are dibbed into the sand with a very small dibber, and a little water is allowed to drip on them to settle the sand about them. A bell-glass is then

put over them, and they are set in a shady part of a warm greenhouse; no sun is allowed to shine on them, and the inside of the glass is wiped every day. F. CHITTY.

THE GRAPERIES OF MR. MEREDITH.

I AM far from finding fault with your intelligent correspondent "EPSILON" (see p. 209), for calling me to account for what I said about the Grape-houses of Mr. Meredith at Garston. All vague and undefined assertions ought to be called in question, and not accepted as valid until some feasible proof, or at least explanation of them, can be given. Certainly now and then a loose expression may be allowed to pass uncriticised if the meaning be understood; but as the quotation your correspondent makes from my former article may leave an impression that I may have said too much, I deem it right to explain the matter more fully, and think I can do so without withdrawing in the least from the statement I first made.

The remark quoted by "EPSILON" from my article on the Garston graperies is that "I believed Mr. Meredith's knowledge will enable him to pronounce whether a certain soil will suit the Grape Vine or not, apart from those outward appearances which are the only guide to a less practised hand." Now, on reading this short paragraph once, and calling to memory what I saw and heard as well from others as from Mr. Meredith himself, I do not think there is anything to retract. Perhaps if the two words "upon examination" had been added after the word "pronounce," the sentence might have been more explicit, but I do not see in which way it would have altered the sense, the more especially when the general reader is informed that the opinion I gave was not formed alone upon the Grape Vines I saw at Mr. Meredith's, but what I saw had been done by him at another place many miles distant from his own establishment. I was told other places formed by him presented like features of good Grape-growing. But I will content myself with describing what I actually saw, and the reader will excuse my mentioning names for reasons which it is needless to explain; but I may say that the Grape Vines in a garden of high repute falling into a bad condition, the Grapes not colouring well, otherwise shanking, while the bunches and berries were below second-class size, and yearly becoming worse, it became necessary to restore them, and Mr. Meredith was called in. What alterations he advised in the houses I need not enter upon, as that is a mere mechanical affair. The evil lay in the border, and its reconstruction was put into Mr. Meredith's hands, and I understand he had the privilege of selecting the soil best suited for the purpose that the estate, and that a large one, possessed.

Now, though my visit to the place was a short one, I could easily see by the character of the agricultural and other crops that there was plenty of what is usually called good land; some in the park might be pronounced excellent, from the vigour of the herbage and the appearance of the trees, and many parties with a *carte blanche*, as I believe Mr. Meredith had, would have been for skinning a large portion of the best of it; but no, Mr. Meredith went further a-field, and I believe the bulk, if not all, of the material he recommended the border to be composed of was brought from an unpromising waste.

I am not certain whether a mere glance at the various soils or a more careful examination of them enabled Mr. Meredith to select the one he did for the formation of the Vine-border, neither does it matter to the general reader. Certain it is that the one he did select, with the other treatment the Vines received, produced as good Grapes as I ever saw in my life, equalling those at Mr. Meredith's own place, and if anything heavier crops. My informant of what was done by Mr. Meredith was the gardener on the spot, a worthy and well-informed man; the Grapes I saw myself, and I never saw finer. The alteration in the border taking place some three or four years ago, I was told the crop of the present year, heavy as it was, was not more so than that of last year, the gardener naively saying that an unusually heavy crop seemed necessary to curb the luxuriance of the Vines. I must here again repeat what I before affirmed of Mr. Meredith's Vines—the leaves were not so large as I

have seen some elsewhere, nor the wood so long in the joints. I believe this to be owing to the absence of those enriching substances which so many are apt to put in such abundance into their borders.

Although it is quite excusable, nay, highly recommendable, for an inquirer like our worthy correspondent "EPSILON" to question Mr. Meredith's ability to give a just opinion at once of the merits of a soil suited to the wants of the Vine, with no further proof than was given at the paragraph quoted, I think the above case fully confirms all that was stated, and I know other examples could be cited. It matters little to the general public whether Mr. Meredith in giving his opinion on the merits of a soil does so at once or takes time to do it, the judgment eventually is a correct one, as the sequel proved. And as Mr. Meredith is professionally employed in the building and furnishing of Grape and other houses, it is only fair that those who want to have further particulars should communicate with him direct. Those who require further confirmation of what I have advanced might go and see for themselves.—J. ROBSON.

ROYAL HORTICULTURAL SOCIETY'S COMMITTEES.—SEPT. 22, 1863.

FLORAL COMMITTEE.—On this occasion special certificates were awarded to Messrs. Veitch, and to Messrs. Downie and Co.; to the former for the beautiful white-flowered *Lapageria rosea albiflora*, a plant the white bells of which contrast well with those of the better known rose-coloured kind, and which will unquestionably prove a most important acquisition for the decoration of our greenhouses and conservatories, as well as for exhibition purposes. What a brilliant effect a pair of *Lapagerias*, the one with rose-coloured the other with white flowers, would have in a mixed collection, especially if they were as large and handsome as the specimen which Mr. Uzzell exhibited at the Crystal Palace. In the same collection with the *Lapageria* were shown the new *Lilium auratum*, a fine variety of *speciosum rubrum*, and two *Eranthemums*. Both of these received second-class certificates. That named *tuberculatum*, from New Caledonia, formed a compact bushy little plant and had a profusion of pure white flowers; the other, which was of taller growth, had white flowers dotted on the under segments with purple. Messrs. Downie's award was for a collection of thirty-six *Hollyhocks*, of which *Neatness*, a deep crimson, had a first-class certificate; and *Lord Clifden*, a crimson shaded with carmine, a second-class one. Among *Dahlias* Willie Austin, from Mr. Keynes, of Salisbury, a rich golden yellow shaded with red, had a first-class certificate; and *Miss Herbert*, a variety somewhat resembling the preceding in its colours, a second-class one. Mr. Legge, of Edmonton, had likewise first-class certificates for *Nonsuch* and *Enchantress*, the latter a yellowish-white, heavily tipped with cerise. *Fairy Queen*, a rosy-lilac on a creamy-yellow ground came from Mr. Alexander, of Leyton, and had a similar distinction conferred upon it. Mr. Turner, of Slough, had second-class certificates for *Favourite* and *Countess* (Fellowes), the former a good purple, the latter a large white variety. *Erebus*, nearly black, was shown by Mr. Rawlings, and was commended.

Messrs. E. G. Henderson & Son sent *Anemone vitifolia* and *Honorine Jobert*, which was commended at the previous Meeting; also *Pelargonium Beauty*, for which a first-class certificate was awarded. This was one of the *Zonale class*, having white flowers, the base of the petals edged with salmon pink, and was altogether a very attractive kind. *Cheiranthus Marshalli variegatus* from the same firm was commended, and three semi-double varieties of *Dianthus hybridus*, white, crimson, and striped, had second-class certificates.

Mr. Gordon, of the Crystal Palace, sent several bedding *Lobelias*; and Mr. Wills, of Oulton Park, Tarporley, two *Pelargoniums*—*Princess of Wales*, a horseshoe with pink flowers, deep salmon at the centre; and *Volcano*, bright scarlet. The former received a second-class certificate, the latter a commendation.

FRUIT COMMITTEE.—Mr. Edmonds in the chair. Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet Lodge, Cobham, sent a *Queen Pine* weighing 7 lbs. 3 ozs., which was

awarded a certificate of commendation as an example of meritorious gardening. A seedling Peach was sent by Mr. Rust, of Broom House, Fulham, called Thames Bank. It is a large yellow-fleshed Peach as large as Late Admirable, and with the broad broken stripes of that variety. It was found to be a good Peach and received a certificate of commendation. Fine dishes of Selway and Late Admirable Peaches were received from Mr. Thompson, gardener to Mrs. Dixon, Stanstead Park, Sussex, which were much admired for their handsome appearance, but the flavour of both was inferior. Mr. Veitch, of Chelsea, exhibited three varieties of Syrian Peaches, one of which had a bitter kernel. Neither of them was named, but they were distinguished by numbers. No. 1 was a good-sized oval Peach with a dark red cheek; the flesh tender but not remarkable for flavour. The kernel is bitter. No. 2 was also a good-sized fruit with a green skin like Barrington, and very dark red at the stone; but the flesh was coarse and the flavour inferior, while the stone was unusually large. No. 3 was of larger size than the others, but the flesh of this also was coarse and not remarkable for flavour.

Messrs. Downie, Laird, & Laing, of Sydenham, sent a bunch of a Grape which proved to be Black Morocco. Mr. Turner, of Slough, sent a dish of Belle de Fontenay Raspberries, which were of large size and very handsome, possessing a good deal of flavour considering the late period of the season, and they received a certificate of commendation. Mr. Rivers, of Sawbridgeworth, brought fruit of a Peach called Clemens Isaire, a large yellow-fleshed fruit deeply stained with red at the stone; but it was acid, and without much flavour. Coe's Large Yellow is also a yellow Peach, and it, too, had a cold acid flavour. Columbia, a dusty-coloured and very downy Peach, was remarkable as having the flesh deep red for some depth under the skin and thence quite pale to the stone; but it was very acid, and without flavour. A seedling Plum, raised from Coe's Late Red, was richly flavoured. It is yellow and oval like a Small Coe's Golden Drop, and promises to be an excellent variety. The Nectarine Peach, a seedling raised by Mr. Rivers, partakes of the character of the Peach and Nectarine both in shape and flavour. Round the stalk the fruit is quite smooth, and over the remaining surface it is covered with a fine down. The flesh is very tender, juicy, and richly flavoured.

THE GLADIOLUS QUESTION.

I HAVE been much interested in the Gladiolus controversy which has appeared in your pages of late, the result of which I trust will enable your subscribers and others not only to grow the bulb properly, but to know what to call it when they have grown it.

The proper pronunciation of the word "Gladiolus" has certainly been a matter of dispute for some time, and, as "D." of Deal, observes, is continually a subject for argument, and to this day is not settled. I do not see, however, why it should not be settled after the very satisfactory explanation given by the above writer in your Number for the 15th inst., which further agrees with the statement given by "R. T. E., Shrewsbury," who quotes Ainsworth, Riddle, and other lexicographers as authorities.

As regards adopting the gardeners' pronunciation of the word, I think that could scarcely be a rule to be relied upon, although we have many instances, no doubt, that if the strictly classical pronunciation of plants was adopted it would appear affected and pedantic; custom having given a pronunciation which in time becomes accepted as correct. If, however, Mr. Beaton has a better authority for his pronunciation of the word than the one above referred to, let us adopt it; if not, I think we cannot do better than settle the matter at once by bowing to Ainsworth and Riddle as set forth in your Number of the 1st inst.—R. TICHBOURNE, Southampton.

HOYA IMPERIALIS.

"E. M." asks us "Which is the handsomest plant to cultivate and train in a trellised pot?" This is a wide question, and we can only reply that the plant so cultivated and trained is the most handsome.

Hoya imperialis, and of that plant we here publish a portrait. It was exhibited by Messrs. Lucombe, Pince, & Co., of Exeter. This beautiful flowering climber was thus noticed by Dr. Lindley at the time of its first introduction in 1846:—

"Imagine a true *Hoya*, with woolly stems, leaves 6 inches long, and clusters of the most magnificent flowers, forming a diadem of ten rays; each flower fully 3 inches in diameter, and with the delicate texture of the common *Hoya carnosa*, and you will have some notion of this superb species. In Mr. Lowe's letter from Sarawak, dated January 12th, 1846, we have the following account of its discovery:—'On the next day, when in the territory of the Gumbang Dyaks, I found another curious plant, belonging to Asclepiads; it is an epiphytal climber; there was but one individual, growing from the decayed part of a tree, also overhanging the river. The flowers are large and in umbels; the leaves are leathery; and the stem abounds in a white, perhaps acrid, juice. The contrast between the purple of the petals and the ivory white of the parts of fructification renders it highly beautiful.'"



It requires a strong rich soil to sustain fully its numerous large flower-trusses, which are produced throughout the lengths of its twining stem. At Kew they used a compost of equal parts loam, decayed leaves, and peat, with some flakes of dry, half-decayed dung intermixed, with sand and broken crocks mixed liberally throughout. Each flower lasts a long time without fading, and is highly fragrant throughout the evening and night.—(*Botanical Register—Botanical Magazine.*)

PLANTS IN BALCONY-BOXES.

LAST year I had plants in window-boxes, Geraniums, Calceolarias, &c., and with your assistance and advice succeeded pretty well. This year I had evergreens in pots in the balcony, and these shaded the window-stools so completely that nothing did well. The evergreens are, however, so pleasant that I am unwilling to give them up, and propose having next year boxes with small rockery and alpine plants. Will they do shaded? and if so, will you mention a few names of those which have flowers with decided colours, and when I ought to begin operations? The boxes might be

4 feet long by 2 feet wide. Is cocoa-nut fibre refuse useful for such plants?

Is it the case that *Kalmia latifolia* will not blow two successive years in pots? Mine have made their fresh wood, &c., very well.

Can plants of *Verbenas*, *Calceolarias*, &c., be kept in a room with a north aspect during winter? I have great difficulty in town. I have no garden where I can put out anything even to stand. There is such a rush of wind in a small yard that nothing can be left in it. House faces south, but there is no spare room in front.—A CONSTANT READER, Dublin.

[We fear that with the shade you will not do much good with alpine, so as to secure anything like continuous bloom of distinct colours. For spring work you could have nothing better than distinct colours of double *Primroses*, *Polyanthus*, &c., and these would then be at home in your yard during the summer. For anything else in summer, a stout net stretched over the yard would greatly break the force of the wind, and keep away those torments of gardening, the cats. You might then have a fine display of *Tulips* and *Hyacinths*, bringing them on in the yard or a cold room, and then transferring them to the boxes. To keep them green all the year round with little trouble, you might plant them with succulents, such as the *House Leek*, *Sempervivum tectorum*, which would yield purplish flower-spikes in July; *montanum*, which is dwarfer and gives reddish flowers; *globiferum*; *Hen-and-Children* *Sempervivum*, yellowish flowers; and other kinds as *arachnoideum* and *flagelliforme*, all blooming about midsummer. These planted in sandy loam would scarcely require even watering unless when showing bloom, and in hot weather in summer. For a neat carpet of green nothing can excel the *Stonecrop*, *Sedum acre*, and its varieties; for in May, June, and part of July it is a carpet of yellow, and needs little attention except pranking off the decayed flower-stems, and giving a little fresh surfacing of sandy loam. There is also a variety of this with golden foliage, so that yellow would ever be present. *Sedum roseum* is a rich rose colour, generally in bloom from May to August, and there are twenty or thirty species equally low-growing and pretty that would require little attention. Then among the *Saxifrages* there is *umbrosa* or *London Pride*, beautiful in bloom and out of it; *hypnoides* or *Cushion Saxifrage*, always a beautiful green, and covered with white flowers in spring; and the pretty *Cerastium tomentosum* and *Biebersteini* would make pretty cheerful lines round the boxes, if they did not fill the latter themselves. If the boxes were 9 or 12 inches deep, we would plant *Cerastium* in one, fully 4 inches from the surface of the box, for it would be sure to grow high enough, and then you might gem the whole by placing out of sight small pots of flowering plants with only the heads seen over the *Cerastium*. As your *Calceolarias* and *Geraniums* did well when there was not the shade of the evergreens, would it not be well to grow some for their foliage alone—such as a box of *Bijou Geranium* edged with *Golden Chain*, and all flowers removed, or the dark small horsehoe of *Baron Hugel* round a box of *Cloth of Gold*, or *Cloth of Gold* or the *Baron* edged with *Cerastium*? With such shade as you speak of, the foliage would be finer in the summer than when fully exposed to the sun. Cocoa-nut fibre mixed with the soil will do well for such plants, and so will the commonest sandy loam from the roadside. If you value your evergreens in pots, or tubs, you will act prudently in defending them from severe frost in winter, so far as the roots are concerned. They will suffer more if exposed in pots than in wooden boxes.

The *Kalmia latifolia* will bloom year after year in pots if well treated—that is, receives no check, has plenty of water, and the suitable soil. Nevertheless, in forcing this plant many turn it out and give it a season's growth, and take it up again the second year. If your shoots are so poor, there is less chance of the plant blooming; but if well ripened and hardened it may do so.

Calceolarias, *Verbenas*, *Geraniums*, and all such plants for summer decoration may be kept well in a room with a north aspect all the winter, provided they have plenty of light, plenty of air, when the outside temperature is 40°, and the plants suffer neither from frost, too much wet, nor too much dryness. The *Calceolarias* will need the most

moisture. Such plants before being taken to the south balcony in the middle of May, should be hardened-off in the yard for a fortnight or three weeks previously, covering them with a piece of calico or anything of that sort at night and during stormy days. We have known cases in which plants kept in a north aspect all the winter did very badly when at once transferred to a south atmosphere outside; but they did well when they had a few weeks in the outside yard beforehand. If we can render further assistance we will do so, and, perhaps, some friends will also be disposed to help in the matter.—E. F.]

ENTOMOLOGICAL SOCIETY'S MEETING.

THE September Meeting of the Entomological Society was held on the 7th inst., the chair being occupied by Mr. F. Smith, the President.

The donations to the Library received since the last Meeting were numerous and valuable, comprising the publications of the Geological and Entomological Societies of Philadelphia, Boston, Bavaria, Dublin, the Smithsonian Institute of Washington, the Royal Society, Society of Arts, Messrs. Lacordaire, Candeza, Le Conte, Hagen, Moiwitz, &c.

The Secretary exhibited a portion of a bin which had been filled with *Chicory*, which, together with the woodwork of the bin was enveloped in a closely-spun white-silken web, covering the wood with a fine polished surface. It was suggested that this web had been spun by *Tinea granella*.

Mr. S. Stevens exhibited a small collection of insects captured during the recent expedition across the interior of New Holland by Mr. F. Waterhouse. Amongst the many new species which it comprised was a very brilliant species of *Tetracha*, belonging to the family of Tiger Beetles.

Mr. F. Bond exhibited a number of very beautifully preserved caterpillars of different kinds of Butterflies and Moths prepared by Mr. Baker, of Cambridge; and Professor Westwood described the plan adopted in Germany for the preparation of such specimens, the skin of the caterpillars being inflated by a blow-pipe and enclosed in a glass tube over a spirit-lamp, the glass being defended by resting on a semi-tube of thin tinware. Minute caterpillars were also preserved entire by putting them into a bottle held over a spirit-lamp for a short time.

Mr. Sharp exhibited a rare species of *Coccinella*, *C. Cabilis*, taken at Herne Bay.

Mr. Waring exhibited specimens of two rare Moths, *Lithostega nivearia*, from Suffolk; and *Stirrhia saccharia*, from Bantled Downs.

Mr. Stainton exhibited a large tabulated plan illustrating at a glance and in considerable detail, the various leading peculiarities in the transformations and habits of the British genera of *Tineidæ*.

A paper by Mr. Walker containing descriptions of a number of new species of Moths belonging to the families *Castniidæ*, *Agaristidæ*, *Hyaleucopidæ* was read; also, a descriptive catalogue of the family of the Stag Beetles, by Major F. Parry, containing descriptions of a great number of new species; the collection of the author far exceeding in the number of species of these insects that of any other entomologist.

WORK FOR THE WEEK.

KITCHEN GARDEN.

FRESH plantations of Cabbages and Lettuces should be frequently examined. Any that droop without an apparent cause should be examined at the roots, where, probably, a grub will be found, which if not destroyed will continue its ravages. *Broccoli*, earth-up the plantations, as they will now be growing rapidly. *Cauliflowers*, continue to prick out the young plants under hand-glasses and in frames. A few may be potted in small pots and placed in a frame where they can have abundance of air and light, and be protected from excessive wet. *Endive*, plant out this and Lettuces for spring use. If planted on the sloping sides of wide ridges they will stand better, damp being quite as destructive as frost. Take the precaution of securing a quantity of both in pits or frames. *Mushrooms*, keep out-door beds protected from heavy rains by a good covering of litter. Maintain a

regular degree of heat in beds in houses, and guard against acidity. *Petatoes*, continue to take up the crops as they attain maturity. Sort them before they are housed or pitted, as it will save much future trouble and waste. *Seasals*, remove the leaves from this and Rhubarb if you intend forcing very early, and keep a look-out for slugs and weeds. We would advise to have two separate receptacles for garden rubbish attached to every kitchen garden (and we allude to this matter at present, because the accumulation of weeds and decayed vegetable matter is considerable at this season of the year), one to receive the matter convertible by gradual decomposition into manure, the other to contain every substance that can conveniently be burnt. A good reserve of burnt earth and wood ashes should belong to every garden, the last substance may be substituted for manure of a stronger character in rich soils which it is desirable to relieve. *Spinach*, thin the winter crop, leaving the plants about 9 inches from each other. Keep it free from weeds.

FLOWER GARDEN.

A sufficient quantity of good turfy loam for next year's operations should now be procured, stacked-up, and thatched with straw, or fern, to throw off rain, likewise peat and sand—both valuable adjuncts in propagating. Soils which have been used in the forcing departments should be brought here and mixed up with decayed vegetable heaps. This forms an excellent and useful manure for flower-beds. Prepare compost for Roses by frequent turnings, at the same time adding rich materials. The trimmings of hedges and other refuse from the shrubberies made into a heap and charred, will form a valuable article for stiff clayey soils. The variegated and other scarcer varieties of *Geraniums* should not be risked too long in beds, they had better be taken up and potted as soon as the weather appears threatening for frost; after potting to be placed, if possible, in a gentle bottom heat in a pit or house where the atmosphere can be kept sufficiently dry to prevent the foliage being injured. By such treatment they will soon become established, when they may be stored away for the winter in a cool dry house where they will be out of the reach of frost. The present is the most eligible time in the whole year for alterations, and whether planting or general groundwork, they should, if possible, be carried forward with vigour as soon as possible. Such operations should not be allowed to press on the ordinary business of the garden; extra work requires extra labour, and if such is not supplied a corresponding amount of injury must occur in some other department, which is the frequent cause of disagreements. Earth-up *Dahlias* well above the crown that a sudden frost may not destroy them. The spare beds, if any, should now be put in readiness for the reception of *Hyacinths* and *Tulips*. Crown *Imperials*, hardy *Lilies*, bulbous *Irises*, *Narcissi*, and other bulbs should now be planted in the borders. These have a pleasing and interesting effect in spring.

FRUIT GARDEN.

The principal operations in this department are the gathering-in of the fruit as it becomes in proper condition, making preparations for filling up blank spaces, and trenching new ground for orchards and fruit-plantations. Prepare for planting all kinds of fruit trees, by getting the ground in good order for the different kinds. On cold stiff soils it is advisable to plant on hillocks 1 foot or 18 inches higher than the surrounding surface. The trees will not grow so fast in consequence, and will require more attention in summer in the way of mulching, but they will form short-jointed, well-ripened, fruitful wood, which is the best preventive of canker, gum, &c., and will save the labour of resorting much to root-pruning. Continue to keep the runners removed from the *Strawberries*, and those that have been some time potted for forcing should now be placed in a comfortable situation to insure their not being too much addened with wet. Strong pricked-out plants may still be potted with good success if placed on a kindly bottom heat. Use every possible means to get the wood of *Peach* and *Nectarine* trees well ripened. If the trees are too thick of young wood, every shoot that will not be wanted at nailing-time should be cut out so as to expose those left to all the light possible. Keep the fruit-room cool and airy, examine the fruit frequently and pick out any that are found to be

GREENHOUSE AND CONSERVATORY.

No time should be lost in housing the plants which have been placed during the summer out of doors; but before placing them in their winter quarters every pot should be examined. If any of the plants are water-bound, or the soil in which they are growing is too heavy and wet, they must be turned out and the drainage examined, and if necessary made new. The drainage in winter is highly important. *Hyacinths* and other Dutch bulbs should be procured and potted without delay. Look carefully after the watering of large specimen hardwooded plants in pots, especially *Heaths*, which are soon injured by being over or under-watered. Let *Azaleas* be tied into form as soon as can be done in order to give them a neat appearance. Keep *Cinerarias* as cool and moist as is consistent with safety, and attend to repotting such as require it. *Primulas* must also be carefully attended to, in order to encourage them to make rapid growth, especially double varieties. Keep tree *Violets* clear of their great enemy, red spider, by a liberal use of the syringe.

PITS AND FRAMES.

Presuming that all the tender stock of plants is safely housed, and anxiety with regard to their safety in a great measure diminished, proceed with the arranging and removing into spare cold pits the stocks of *Pentstemons*, *Antirrhinums*, *Linums*, *Phloxes*, *Bromptons*, *Intermediate*, and other Stocks, and all herbaceous plants in pots that require a little protection. The pots to be plunged in sand or coal ashes, which is not only a protection but saves much labour in watering during the spring months. When all the plants are arranged this department should undergo a thorough cleaning, all litter and rubbish to be removed. If the foot-paths between the ranges of pits be in bad trim, a layer of gravel or coal ashes will add much to the neatness of this department. Pot-off cuttings. Establish a good stock of *Verbenas* in pots, as duplicates of the choice sorts; harden-off cuttings for bedding out next season, that they may resist the gloom of the approaching winter. W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

RAN the Dutch hoe through many growing crops, where the rains had brought up a mass of weeds fast approaching half an inch in height. An hour's sun would soon settle them. Most of these were the never-ceasing annuals, as *Chickweed* and *Groundsel*. Where they all come from is perfectly marvellous. No wonder that would-be philosophers speak of spontaneous generation. For years we have hardly ever seen a *Groundsel* in seed, and yet every piece of trenched-up ground yields its myriads upon myriads. *Cow Thistles*, and other *Thistles*, too, have made their appearance, brought to us, no doubt, by the wind, from the fields and hedgerows of slovenly farming. One day in August, we were pretty well covered with *Thistle-down*—a hedgerow next the highway, with a fine field of *Wheat* inside, was as crammed full of *Thistles*, sending their downy seeds streaming for miles, as if some great prize had been offered for the best specimens of *Thistle-culture*. The only redeeming points in the scene were some beautiful *goldfinches*, that no doubt were deeply grateful to the waywardens and the farmers for securing them such a bountiful supply of their favourite food. With increased premiums for the best products of gardening and farming skill, it would be no bad move to inflict a fine for all specimens of winged seeds allowed to reach maturity. Once scattered over the soil, generations to come will not see the last of them. Though we managed to lay hold of a rabbit or two, yet fearing for our plantation of young *Cabbages*, we run a single width of net all round the piece, supporting it on stakes, and we have not since been disturbed by their ravages in that direction. Examined the *Mushroom-spawn* bricks, not too wet nor too hot; put straw covers over the heap to keep the wet from them. On Tuesday afternoon had a hurricane of wind and hail; but it has been rather warmer since, and the barometer, very low, is slightly on the rise. Cleared a piece of *Canflower-stalks*, and put more plants in thickly. Put old lights over a nice piece of *Dwarf Kidney Beans* to encourage them. *Peas* are doing better than we expected. Well watered a row of *dwarf*

ones under glass, just coming strongly into bloom. Earthen-up second piece of bed in the Mushroom-house. Nipped-in Cucumbers. Pricked-out more Lettuce and Endive. Thinned Parsley. Cut over a good part to make it stubby before winter. Regulated herb-beds. Watered Globe Artichokes, the watering with sewage water has given us a fine yield of Scarlet Runners, though previously from the drought the flowers were dropping off without setting. Took up part of Carrots, stringed Onions, &c.

FRUIT GARDEN.

Was obliged to fill the late vinery with plants from a house, which, in connection with a Fig-house at one end, we are repairing and elevating, in order to make a fresh arrangement within. The house was so low that, though 11 feet wide, we could only have a platform on each side and a walk in the middle; but by raising the roof 18 or 20 inches we shall be able to walk all round and have a platform in the middle, as well as small ones at the sides. In raising the wall opportunity has been taken of leaving spaces there for ventilation back and front, so as to avoid all necessity for moving the sashes. The wall plate in front was previously about 1 foot above the ground outside, the house, originally a Pine-pit, being sunk inside; and it would have been better to have had the fresh-raised part of glass, but this would have entailed more expense for sills and sashes, and we think we shall have enough of light for what we want. The roof has a short hip, and the rafters and plate having been repaired the roof was tied together and raised in a piece. The walls are 9 inches, and the openings admit a wooden box without top or bottom, so as to give a clear opening of 13 inches by 9. In the middle of this space a board of the above size, just so much less as to move easily, is hung by two screws as pivots, and about 3½ inches from the top of the box, so that the weight of the wider portion below will always keep it shut, unless when kept open, which it can easily be from a quarter of an inch to the whole space, when, of course, the ventilator will stand horizontally in the opening, and neither inside nor outside will it ever appear beyond the face of the wall. We have long found that all sorts of hinging are a continual annoyance, from rusting, breaking, and all the rest of it. Another fact we have found out is that, provided air is given early or left on all night, there is no necessity for so much air being given during the day. We think, on the other hand, that it is economical policy to make the sun do the work, which used to be done to a great extent by the coal heap. Of course, there must be as much moderation in this as not to scorch or burn what is under glass. That, however, is chiefly done not so much by the mere heat as by a confined, close, moist atmosphere, and that is reduced to a minimum by the early air-giving. Gave more air and heat to the late vinery to suit the plants and to prevent the Grapes damping. What are left of the Figs in the Fig-house, will now do little more from being exposed, but those out of doors have come in well. Gathered fruit as it ripened when dry. Went over Apricots and Peaches out of doors, nipping off laterals and shortening a few strong shoots to hasten the thorough ripening of the wood. Cleared Strawberry-beds of runners and litter, and slightly forked the surface to let the rains pass and prevent the frosts entering.

Now is a good time to make arrangements for fresh planting fruit trees, and in stiff or clay soils it is a good plan to plant on raised mounds, even though it be necessary to mulch the surface in dry seasons, which if done in time will prevent the necessity of much watering. After a regular trenching, fresh soil would be desirable for the mounds, if it can be obtained, and these may be 18 inches above the common level. When the ground is not well drained, a cartload of rough stones might be placed under each tree, and in as loose a position as possible, the smallest at the top. This, however, will not make up for the presence of stagnant water amongst the stones, the result of deficient drainage. In light soils they cannot be packed or beaten too firmly round the roots of fruit trees.

Now, also, is a good time to cut the roots of trees becoming too luxuriant, or if young to take them up and replant them as soon as the fruit is gathered. With this proviso as to the fruit, if it is intended to lift Vines, the sooner it is done after this the better, as the ground is still warm, and if a few leaves keep green even for a short time, the roots will im-

mediately begin to work, and will keep on less or more all the winter, if cold and excessive wet is excluded. As we may also now expect heavy rains, the outside borders of early vineries should be protected from wet to keep them at rest, and those of late vineries to keep the roots moderately dry and warm. There are many modes of doing this, perhaps none better than wooden covers or shutters, as these keep all below them dry. However, we cannot all have such nice materials to work with. Many employers are quick enough in speaking of some extraordinary result, but they turn their heads when some of the means come to be referred to. We have just done something, as in former years, to prevent our borders being soaked. A little cowdung is spread thinly over them, and then a very thin layer of tar over the cowdung, some eighteenpence worth at a penny a-gallon covering a large border, and on that is thrown a lot of road drift or sawdust, so as to make a crust and keep down the odour of the tar. Now this is all very well as respects mere dryness, but then it does little to retain warmth, as even if we put litter on, if we cannot keep it dry, we do little in the way of securing warmth, except we rough-thatch or do something of that kind. Now, we have proved that a border rather dry, covered in the end of September with a foot of dry litter, and then covered with tarred wooden shutters, would be pretty well warm enough for moderately early forcing, without any artificial heat being given.

ORNAMENTAL DEPARTMENT.

It is now time to take all greenhouse plants under cover. Excessive wet and a very cold or frosty night, will spoil the blooming of Camellias and Azaleas for the following year. Tied-up large plants of Chrysanthemums, Salvias, &c. Thinned creepers and climbers in conservatory. Kept stove plants drier to ripen the wood. Placed Gloxinias, Achimenes, &c., done flowering in a dry place beneath the stage in a vinery to ripen their tubers; ditto with Gesneras past their best. Gave moisture and heat to those growing and flowering. Lessened water to large plants of good-foliaged Begonias to get them gradually in a state of rest, when they may be kept in a small space, in a low temperature, and be potted and grown on next spring for the conservatory. Looked after mildew and red spider on Violets. Smoked some Cinerarias that seemed to have a little fly. Potted Chinese Primulas into 40 and 32-sized pots, using fresh loam and a little leaf mould. Put in lots of cuttings, that will go under frames, of almost everything for beds, as we want them just to throw out their first rootlets about November, so as to be small all the winter. It is very well to talk of potting cuttings off. If we did so we should have no place for them all the winter. We like them better the smaller they are until January, and then we let a few of them grow larger. Will prepare a pit for Calceolarias by the end of the week, so as to begin with a few of the scarcest next week. We will select side pieces for cuttings from 2 to 2½ inches in length, leave about three joints altogether, cut across at the lowest, and insert in sandy fresh loam, with a quarter of an inch of sand on the surface, and the cuttings 1½ inch in the row, 1½ inch from row to row, and about 15 or 18 inches from the glass. These, put in in the end of October, we will not expect to be much rooted until January; and the latest put in, if they have not been frosted, we will expect to be the best. Skimmed a part of lawn with the scythe, in order that we might pull up plantains, &c., before sweeping and rolling. The dry summer did not give us the chance before of weeding lawns. Switched the sides of the walks to remove tiny heaps collected by the rains, and rolled them. Just looked over Dahlias, Phloxes, &c., which may be good for some time if the weather hold fine. One piece of Dahlias was so dried that the flowers are not worth looking at even now.—R. F.

COVENT GARDEN MARKET.—SEPT. 26.

The supply of fruit and vegetables continues ample; there is an increase of importations from abroad, and a fair average amount of business is done. The importation of Oranges is for the present suspended, and Lemons have fallen in price in consequence of a further supply having been received. Pines and Grapes are quite sufficient for the demand. In Pears Marie Louise, Louise Bonne of Jersey, and Williams' Bon Chretien afford the principal supply. Brown Beurré and Gansel's Bergamot are also coming in very good. In Apples Ribston Pippins are the most in request at this season. Cobnuts are bringing from 55s. to 70s. per 100 lbs. Of Potatoes

the supply still continues very plentiful; disease, however, is making its appearance to a much more serious extent than was anticipated. Of other vegetables the supply is also ample; a few Peas are still to be had, and some Savoy are coming in, but as yet are not in request. Cut flowers for the most part consist of Orchids, Roses, Pelargoniums, Asters and Mignonette.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples..... $\frac{1}{2}$ sieve	1	6	4	0	Nectarines.....doz.	0	0	0	0
Apricots.....doz.	0	0	0	0	Oranges.....100	0	0	0	0
Figs.....doz.	1	6	2	6	Peaches.....doz.	2	6	12	0
Filberts & Nuts 100 lbs.	55	0	75	0	Pears.....bush.	5	0	7	0
Grapes, Hamburgs. lb.	1	6	5	0	dessert..... $\frac{1}{2}$ sieve	2	6	5	0
Muscats.....lb.	3	0	6	0	Pine Apples.....lb.	3	0	6	0
Lemons.....100	8	0	16	0	Plums..... $\frac{1}{2}$ sieve	3	0	6	0
Melons.....each	1	6	4	0	Quinces.....bush.	0	0	0	0
Mulberries.....quart	0	6	0	9	Walnuts.....bush.	14	6	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad.....bush.	0	0	0	0	Leeks.....bunch	0	3	0	0
Kidney..... $\frac{1}{2}$ sieve	1	6	4	0	Lettuce.....score	1	6	2	6
Beet, red.....doz.	1	0	1	6	Mushrooms.....pottle	1	0	2	0
Broccoli.....bundle	0	0	0	0	Must. & Cress, punnet	0	2	0	0
Cabbage.....doz.	0	9	1	3	Onions.....bunch	0	4	0	6
Capcums.....100	1	3	2	0	pickling.....quart	0	6	0	8
Carrots.....bunch	0	6	0	8	Parsley.....bunch	0	3	0	4
Cauliflower.....doz.	3	0	5	0	Parsnips.....doz.	0	6	0	9
Celery.....bundle	1	6	2	0	Peas.....bush.	0	0	0	0
Cucumbers.....doz.	2	6	10	0	Potatoes.....sack	5	0	8	0
pickling.....doz.	0	8	1	0	Radiishes doz. bunches	1	6	2	0
Endive.....score	1	3	2	6	Rhubarb.....bundle	0	0	0	0
Fennel.....bunch	0	3	0	0	Savoy.....per doz.	0	0	0	0
Garlic and Shallots, lb.	0	8	0	0	Sea-kale.....basket	0	0	0	0
Gourds & Pumpk., each	0	0	0	0	Spinach.....sieve	1	6	2	0
Herbs.....bunch	0	3	0	0	Tomatoes..... $\frac{1}{2}$ sieve	2	6	5	0
Horseradish...bundle	1	6	4	0	Turnips.....bunch	0	3	0	6

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

SEEDLING TROPEOLUM (W. F. S.).—The varieties are numerous and beautiful, but it is quite possible to excel them. Whether your seedling does so we cannot tell, not being clairvoyants.

NECTARINE FOR NORTH YORKSHIRE (J. F. N.).—The Violette Hâtive is the variety most likely to ripen against your south wall.

GLASS FOR A FERNERY (T. L. T.).—We consider 21 oz. glass painted on the outside quite equal to Hartley's Patent for the roof of a fernery, and it only costs about half the money. The glass must be quite dry when the paint is put on, and the coat very thin, if it cover that is enough. Whilst the paint is wet dash a painter's dust-brush perpendicularly on the painting, and that will give it the appearance of frosted glass. The only objection we have to painting glass is that it makes the house gloomy in winter. Ground glass we have not tried, and fear it would not prevent the sun's rays from scorching the plants. We have a house glazed with Hartley's patent rough plate glass a quarter of an inch in thickness, and though we cannot see through, it does not render shading unnecessary; in fact, it has to be shaded with tiffany No. 3 from March to October, and we think the same would apply to ground glass. We have a painted fernery roof little the worse at the end of four summers, and we never had a scorched leaf nor a pale-coloured frond, though the house is gloomy in winter.

CAMELLIA LEAVES SCORCHED (S. W. C.).—The Camellia leaves are scorched by the sun shining powerfully upon them whilst wet. The leaves of the Camellia should always be dry when the sun shines powerfully on them. The cellular tissue of the leaves of No. 1 appears to us to have become decomposed by keeping them almost constantly dripping-wet. Syringe it very little after the leaves attain their full size in future, and shade them from very bright sun, or plant some creepers that will afford a little shade in summer and obstruct the light but little in winter. No. 2 is spotted by allowing water to drip from the roof upon the leaves, or drops of water standing on them when the sun shines fiercely will produce the same result. The glass of the roof may be of a bad quality, and that would account for the leaves being in the pitiable condition of No. 1; but No. 2 we are quite certain is spotted by allowing water in drops to stand on the leaves. There is no disease that we can see but what will be easily removed by keeping the leaves dry in the early part of the day, and syringing only in the evening; and then only when the plants are making new growths. Syringing once a-week after the growth is made and buds formed is enough to free the leaves of dust, and a thorough washing with a sponge of both sides of the leaves is better than all the syringing put together. See that the soil about their roots is not sodden, and that the water is not put on them, and admit abundance of fresh air.

SHALLOT CULTURE (S. W. C.).—The Shallot likes a rich friable loamy soil, and if not rich it should be well manured previously to planting, and well rooted and incorporated with the soil before planting time. Plant in beds 4 feet wide, and draw drills with a hoe about 3 inches deep, and 9 inches from drill to drill, in which place the roots 6 inches apart, and fill in the drills with fine mould level with the surface of the bed. The beginning of February is the proper time to plant them, and if the ground be frozen at that time, plant as soon afterwards as circumstances will allow. Remove all weeds, and when the tops of the Shallots turn yellow pull up the roots and let them lie on the surface a few days to dry, when they are to be housed like Onions.

PLANTS FOR ROCKERY (F. W.).—Creepers or otherwise small auburn and herbaceous plants for rockeries—Berberis buxifolia, and B. empetrifolia; Genista decumbens, G. procumbens, G. tetragona, G. tinctoria, and G. tinctoria plena; Cistus purpureus, C. crispus, C. salvifolius, C. Ledon, and C. lucitanicus; Cotoneaster microphylla, and C. rotundifolia; Genista triquetra; Daphne cneorum, and D. cneorum variegata; Ulex europæus, U. europæus plena, and U. nana; Helianthemum vulgare, H. vulgare flore pleno, plenum album, H. roseum, H. macranthum, H. algarvense, and H. alpestre; Gaultheria procumbens; Kalmia glauca, K. angustifolia, K. angustifolia variegata, rubra, nana, and ovata; Juniperus prostrata; Ledum buxifolium, L. latifolium; Vinca minor, V. minor argenteo-variegata, aureo variegata, flore pleno, and V. herbacea; Vaccinium buxifolium, V. vitis-idaea, and the variety major; Yucca filamentosa, and variegata, Y. angustifolia, Y. recurva, and Y. gloriosa. Hardy Heaths—over thirty species or varieties, and the sweetest of trailing plants Epigaea repens. The small-leaved Ivy, and, in fact, most of Hederas are picturesque in rock-work. Of herbaceous plants—Alchemilla alpina, montana, conjuncta, hybrida, &c.; Ajuga reptans variegata, and A. reptans alba; Alyssum alpinum variegatum, and A. maritimum variegatum; Antennaria hyperborea, A. triplinervia, and A. margaritacea; Arabis albidia, bellidifolia, arvensis, saxatilis, variegata and stenopetala; Arctostaphylos alpina; Arctotis breviscapa; Aristolochia clematilis; Armeria maritima, ditto formosa and roses, A. vulgaris alba; Artemisia maritima; Aster alpinus; Aubrietia Mooreana, purpurea, and its variety grandiflora; Campanula garganica and pulla; Cephalaria alpina and tatarica; Cerastium repens and tomentosum; Chelidonium majus, and the double variety thereof; Circæa alpina; Cochlearia danica, grœnlandica, and officinalis; Convolvulus fruticosus; Coronilla minima; Dianthus alpinus, deltoidea, floribundus, hybridus; Dryas Drummondii and octopetala; Fragaria monophylla; Heuchera suffruticosa; Iberis carnosa and sempervirens; Lotus corniculatus, ditto flore pleno and L. cytoides; Phlox Nelsoni and rosea; Saxifraga, over a hundred varieties, and more than sixty Sedum, all charming for rockeries; and not less so are the Sedumvirgata, of which there are more than a dozen species; and very many more plants suitable for rocks may be had at any nursery of note.

ROSES FOR BORDER (Idem).—Cabbage or Provence—Madame Laffay, Baronne Prevost, Duchess of Sutherland, La Reine, William Jesse, and Géant des Batailles, and one and all of the Hybrid Perpetuals are excellent border Roses on their own roots. They require no more care, and are every way better than a lot of old-fashioned Roses formerly grown in gardens which were infinitely inferior to a Dog Rose.

VINE CULTURE (W. R. J.).—To give all the information you require would fill an entire Number of our Journal. You must purchase a work on Vine culture. That by Sanders or by Thomson will suit you. As you do not require Grapes early you need not begin forcing before December. The air requires to be kept moist by watering the paths, syringing the branches, &c. The borders, if properly made, require no manure. As the roots of the Vines are outside, the surface should be mulched in winter to exclude frost and excessive wet, and in dry weather during summer to keep in the moisture. The flavour of any variety of Grape depends on its good culture and the amount of sunshine.

LIST OF FRUIT TREES (W. M. C.).—Dessert Apples.—Irish Peach, Kerry Pippin, Cox's Orange Pippin, Cockle Pippin, Old Nonpareil, Margil, Kitchen Apples.—Kewwick Codlin, Bedfordshire Foundling, Damsel's Seedling, Yorkshire Greening, Striped Beefing, Alfriston. Pears.—Jargonelle, Williams' Bon Chrétien, Baronne de Mello, Nouveau Poiteau, Winter Nellis, Joséphine de Malines. Plums.—July Green Gage, Deniston's Superb, Jefferson, Green Gage, Purple Gage, Reine Claude de Bayay, Kirke's. Cherries.—Black Tartarian, May Duke, Elton, Bigarreau, Morello, Belle Magnifique.

BOX EDGING (W. R. J.).—Your gardener is quite right about there being more kinds of Box edging than one, as is exemplified in our own garden, where the difference of the two kinds may be traced to a plant. In fact, there are different grades of dwarf Box, the very dwarfest and best being far from common, while a coarse-growing kind, better adapted for hedges than edgings, has found its way into some gardens, our own for one. The dwarfing of Box edging does not depend on soil but on the kind of plant used, as we have detected three kinds in one line with clearly marked differences. Box is the Buxus sempervirens of botanists, and they have two varieties of it, angustifolia (narrow-leaved) and suffruticosa (sub-shrubby), and it is the last-named that is alone suited for edgings.

CHASSERAS MUSQUÉ GRAPES CRACKING, &c. (Hibernicus).—You will have little chance with the Chasseras Musqué unless you can keep the house drier and prevent the roots being much soaked by placing a sauh over the borders. We think root-pruning will do the Grosse Mignonne good, and thinning the fruit pretty well before they become so large. The Fushias may be so grown in a cool stove, with a fair amount of air. If kept too hot they will be apt to be leggy and too luxuriant. Your Fern is Nothochloa nives, sometimes referred to Gymnogramma.

SIZE OF CONNECTING PIPE (Tyro).—The one-inch will do for connecting the four-inch pipes with the boiler—we presume that is what you mean. It is amazing the rapidity with which four-inch pipes can be so heated. Of course, you are satisfied your boiler is large enough for the additional work.

DWARF TREES IN FRONT OF WALL TREES (R. H. A.).—If your trees are not more than 4½ feet in height they will injure the trees on the back wall but little. It would be as well if the roots of the two sets of trees were prevented interlacing by making a wall below the surface 6 feet from the back wall, but that is a matter of choice. Your ventilation will be more than ample, but it is best to have enough, and we never recommend any one to put up a cheap house who professes having such structures built in a substantial manner.

WINE SCARLET GERANIUMS (G.).—No rule should be driven too hard. sowing Scarlet Geraniums freely you get more healthy robust plants, in keep them for many years, if so disposed, in the same sized pots. opting the Harry Moore style the plants are kept in the same pots or . Any extra strong shoot is pinched, to make all regular; but after years little of this will be required, as there will be comparatively growth. Dryness in the end of autumn will cause the leaves to fall, ter that the soil should be dryish, not dust dry. In spring most a few twigs that seem sickly will want removing, and very likely lat of a shoot if not well ripened. Such plants are best kept like a . in winter, but free from frost. There is so little growth that there e chance of legginess. When the buds break a little water is given, ost likely a little rich surfacing. The plants will not only bloom early autumnally all the summer; but, as a rule, the individual trusses of will be smaller than on plants cut back, repotted, &c. We lately saw, teridge Bury, four massive plants of Tom Thumb, in the centre of covered with bloom from top to bottom—the only plants in the garden plunged in pots, and they had been in the same pots sixteen and were treated as above stated.

TECTING GREENHOUSE FLOOR FROM DRIP (Idem).—We should prefer ging of zinc with the pipe for the stage, and cannot understand about pe throwing its heat up to the centre of the house. The stages might e rendered watertight by pitch, as practised at Mr. Bewley's, near . A few ornamental stages so done might be placed in the house, drain-pipe in the centre, and when desirable that could be taken by to a pall underneath. We once had vases to fill with flowers and healthy, but no water must be seen on the floor. We had wood ale made, painted and sanded to resemble part of the large vase, and e we placed zinc troughs, which we emptied before they were full. an you propose would be the best in your circumstances, if you dis- e look of the saucers. Prune the side shoots of the Solanum jasmin- o two buds.

RACE BEDS AT CRYSTAL PALACE (Ness).—About the long line of s the terrace you have made a mistake. The centre of the long beds ted with Geranium Crystal Palace Scarlet, on each side Geranium na (pink), with an edging of Verbena Purple King. The circular etween are planted with Calceolaria Aurea floribunda, edged with um Flower of the Day.

ELIA SPECIOSA NOT PROSPERING (C. P.).—Yours is not a solitary case, have seen more than one other of a similar kind. Usually Lobelia ore moisture than we had the last July; but as this cannot always rded, we would advise you next season to try seedling plants. They better than those from cuttings, though they are not always so good nor so upright in habit. The Lobelia does not furnish much foliage time during the summer, and when the plants are not healthy it is ver-stem, so that many growers are obliged to cut down a plant in t to encourage a growth of shoots for cuttings.

HEAD OF DWARF APPLES (W. E. J.).—If your trees show undue ance two or three years after planting, then take them up and re- them, but such as incline to bear well will not require this. The ce to plant them will depend on the size you propose to allow them w; but we should think about 12 feet from tree to tree will allow o be trained bush fashion. If for pyramidal standards they may be closer, but we should not expect more fruit by being nearer than

UM FRAGRANS, IXIAS, SCILLA, AND SPARAXIS (Eubiferum).—Allium as is a native of the West Indies. Plant it in a pot of light rich soil nd keep it in a warm greenhouse. Ixias and Sparaxis are in many eerving of pots, but we have known them also do well out of doors. re somewhat of the same habit as Tritonis—a sort of pseudo-bulb. ould think they would do in the midland counties if planted in dry l, and slightly protected if very severe weather occurred. Scillas are but are nevertheless favourite potted plants, especially S. praeox, na, and others, which force well and form lovely objects early in . In this respect they differ widely from the Ixia and Sparaxis, which ower in summer, and often rather late in that season. All the es are hardy.

ERT TREES 20 FEET HIGH (Fibbertum).—We fear your Fibbert trees e been allowed to grow unpruned until they have attained the you mention are useless, for to cut them down to the ground would to obtain a crop of rods better suited for cask hoops than for making l bearing plant. We should uproot the trees and plant others, not ame ground however, and at an early period in the coming winter. ll see some notes in our pages on the pruning they require. No hat we know, not even the Vine, requires more judicious pruning e Fibbert.

IOUS (A Constant Reader, Dublin).—Skimmia japonica will stand sun as a Camellia. If the leaves are dry the sun's rays will not blotch . It does well in a pot, kept in a cold put or cool greenhouse. e conorum does well in a pot. Both this and Skimmia japonica do stely in town, and they bear wind well, as all plants of low growth riegated Holly will grow almost anywhere, and in anything. Yuccas e to be strong and a moderate age before they flower. We do not hat size the pot Lapageria rosea was shown in; but we have seen e plants on an umbrella trellis in 18-inch pots.

FIRE PIPE JOINTS—PIPES REQUIRED (A Regular Subscriber).—Ram mp or tow, with or without red lead, to the socket of your joint, just s a rest there. Make some Portland cement into a thick paste, fill the e thoroughly with it, and, as soon as it shows signs of setting, smooth the ll round with a putty knife, and go on with the next—or, rather, go a that whilst the first is firming a little. To commence in March ould need at least 54 feet of four-inch piping. To do so from e to January you would need nearly double—fully from 70 to 90 feet. an start the Vine in the pot early, and plant when the ground is o as to give no check, you gain time, but at the expense of much al care and labour. If by spreading out the roots in a cold soil, or ar carelessness you check the Vine, you will lose more than you gain.

FOCUSIAS (Donegal).—Smith's:—Gansparell, Conspecta (white e Mammoth, Hercules (double); Banks':—Minnie Banks, Mars, or .-Spirelli. Lissless.—Tricolor, Perfection, Etiole de Gand, Flag of e Revolution, Sir H. Havelock. If address is sent a correspondent st, for the sake of the old country, he would send a few cuttings of s.

CABBAGE APHIS (D., Newcastle).—Your Cabbages are infested with the Cabbage aphis. Soot water is a drink they do not like, and dry soot sprinkled on the leaves and stems whilst wet will make them shift their quarters; and if the stems be sprinkled with soot prior to an attack they rarely touch them, for no insects like the presence of soot. It really is marvellous to see how plentiful insect plagues are becoming, and yet people advocates the destruction of small birds, insects' natural enemies. We rarely are troubled with any insects, but we shelter birds.

OVER-VIGOROUS PEAR TREE (Idem).—Dig out a trench half the height of the tree from the stem, and cut all roots that you find within 3 feet from the surface. Thin out the branches to a clear foot distance between each, cutting all foreright shoots close, not leaving so much as an eye; but the short spurs you must not prune at all, nor shorten the extremities of the branches unless the space allotted to them is exhausted. Remove all strong-growing shoots the season following by disbanding, and use the knife but sparingly.

KILLING WORMS IN A TAN-PIT (George Sim).—Be cautious about using salt to kill worms in a tan-pit in which Ferns are plunged. The least touch of salt is fatal to most plants of the Fern tribe, whether it be the root or fronds that are in contact with it. As the pots as well as the tan are full of worms, you must drive them out of the whole. Take a hoghead, say holding sixty gallons, and in this put 25 lbs. of fresh-burned lime, pour sixty gallons of water upon it, and let it stand forty-eight hours. Having stopped up the holes in the pots, deluge them with the clear lime water for a couple of hours. The worms will come to the surface—we need not say "Catch 'em and kill 'em." Water the tan with the lime water, and clear the worms away as they appear. Then sprinkle some ammoniacal liquor from the gas-works on the tan, or a thick sprinkling of salt will answer the same purpose. You may then cover the surface with ashes, and if you put small pebbles 3 inches thick over the ashes the appearance will be improved and the drainage kept open. Gladioluses need no syringing if the atmosphere be kept moist; but a gentle sprinkling refreshes them in hot dry weather.

TANK-HEATING CUCUMBER-PITS (J. Hill).—We have not a word to say against tanks of any kind provided they are secure; but you had better have all tanks or all pipes for bottom heat, or both pipes and tanks—that is, the pipes passing through the tanks. But now as to the tanks, on the length of the house, and 2½ feet wide and 4½ inches deep, would be ample for bottom heat if you have two three-inch pipes for top heat—better two four-inch pipes though. These should be heated independently of each other. Supposing the tank to be covered with slate, we would place on that 4 or 5 inches of rubble and then 15 to 18 inches of soil, and then the foliage should be 15 inches from the glass. Were there not other reasons for the tank, we would run two four-inch pipes for bottom heat and two for top heat. On the bottom heat pipes we would place above and all round them 4 to 6 inches of open rubble, and on that the soil, with drain-pipes open at top for sending moisture among the rubble when desirable.

VINE-BORDER (An Old Subscriber).—Let there be a thorough drainage, and then form it of a mixture of one half turfy loam (top-spilt of a pasture), one quarter charred rubbish and crushed bones, and one quarter limey rubbish and bricks broken small.

NAME OF GRAPE (—).—The specimen sent is not the Muscat Hamburgh, but the White Tokay. We have mislaid your letter, and therefore cannot give you *nom de plume*.

NAME OF SEA ANIMAL (A Devonshire Rectory).—The marine animal found in vast numbers on the sands at Northam Burrows, near Bideford, is an Acaleph belonging to the genus *Velella*, either *V. limboea* or *V. cyanea*.—W.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (T. C., Limerick).—Your Fern is the *Asplenium lanceolatum*, a rather rare Fern in England, and this Fern varies much, according to the situation, in size, form, and even texture. The other plant is the common purple Dead Nettle or Archangel, *Lamium purpureum*, an annual—a weed. (M. D.).—It is the *Coleus fruticosus*, which used to be called *Plectranthus fruticosus*, a native of the Cape of Good Hope, and was introduced to this country in the year 1774. We are aware that this is a favourite plant among the middle and humbler classes of Londoners, and by them called the Nettle Geranium. It will live in almost any gloomy place if protected from frost. (George Cottrill).—Your plant is the common Feverfew, *Pyrethrum parthenium*. There are various forms of this plant, from good double quilled down to semi-double and the common single. (P. H. G.).—*Scutellaria cordifolia*, a native of Mexico, introduced in 1844. (Rosa Dertle).—*Calystegia pubescens flore pleno*, a beautiful climber from China. (Borr and Sugden).—The plant brought from Holland, where it grows freely and is there called "Nacht Schatten," or "Night Shade," is only the common Marvel of Peru.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

SMALL BIRDS EYED BY A POULTRY KEEPER.

It seems to us that few persons are better able to take part in the "bird murder" controversy than those who keep poultry, especially if it is in confinement. The constant feeding and attention give them the opportunity of judging the habits of these benefactors or depredators, as may be. We have tried in every way to master the subject by observation, and we can come to one conclusion only. Where small birds, for lack of any other are driven to their natural food, we believe they are most useful; but where they can feed in the poultry-pens at all times they become fat and lazy, and forget or neglect the work of usefulness for which they were sent.

As we look out of the window where we are now sitting, we can see a man going round with a pail of meal from pen to pen. The flocks of sparrows, chaffinches, &c., follow him, by flying from tree to tree, and dropping into each pen as fast as he leaves it. Now, we are sure these birds do no good. There is no occasion for them to seek food. They are privateers, or rather pirates, and take all that comes in their way. They thrive upon it. We swarm with every description of them, and we like to see them about; but it is often a great annoyance to us.

When we have occasion to remark on the consumption of food, we are always reminded we have forbidden the destruction of small birds. We do not much approve of Indian corn for poultry, but in hard weather, and, indeed, partially all the year round, we are compelled, as a measure of economy, to feed with it, to the consternation of our small pests.

We follow the controversy in the *Times* with great interest, and the opinions of the amiable and talented men who have written on the subject are entitled to the respect and admiration of all. But it seems to us we want to hear more from practical people who deal with nature and with facts as they bear on pounds, shillings, and pence, divested of everything like poetry or sentiment.

The time of year is rightly chosen, as any one who undertakes to diminish the numbers of his small birds must do so in the approaching winter. It cannot be done at any other time. Nature has endowed them with the property of self-preservation. The gun, if one bird at a time be shot at, is too slow to accomplish destruction. A man kills a dozen, and seeing only few about the place, fancies he has "pretty much thinned them," but the truth is they are crafty. After they have been shot at a few times, they "skedaddle" the moment they see any one; but they are always on the look-out. Few people have any idea of the difficulty of extirpating small birds by means of the gun. A gentleman complaining at a dinner-table of the bad sport he had when shooting, said he wished "black-birds and thrushes were game; the swedes were full of them, and he could have killed thousands." His friend made a bet with him that he could not kill a hundred in the day, shoot one at a time. It was accepted, and he was allowed the whole day, but he killed only between forty and fifty. We knew an instance where a sick person wanted larks, and three men went out with guns to kill as many as they could. Notwithstanding it was in the winter, and they had hundreds of acres of cultivated land to go over, the three did not bring in four dozen. We have seen a positive and literal bushel full of small birds killed in one day in a pen during a hard frost, when the ground was covered with snow. We believe small birds every year consume large quantities of food, for which they make no return. We have tried to side with those who preserve them, but we cannot. Our experience is, that when there is no fruit, they fly to the poultry-pens; but that under all circumstances they are at peace with grubs, caterpillars, *et hoc genus omne*.

MIDDLETON AGRICULTURAL SOCIETY'S POULTRY SHOW.

THIS Show was held at Middleton on the 17th inst. The poultry classes were confined to birds of the present year, with the exception of Turkeys and Bantams. For all varieties, excepting Ducks, Geese, and Turkeys, there were three classes—viz., cockerel and pullets, single cockerels, and pairs of pullets. Considering the period of the year when this Show is held, the Committee were certainly justified in excluding old birds from competition. At a Lancashire show it might have been anticipated that the Game and Hamburg classes would have been most conspicuous for merit, but they did not contain so many pens of really good birds as the classes allotted to Dorkings, Cochins, and Game Bantams.

The classes for Black-breasted and Brown Red Game stood out on the list, and amongst these the class for pullets was probably the best. In the class for cockerel and pullets of any other variety of Game, the first and second prizes were given to Duckwings. The first-class cockerel promises to make a very fine bird.

would suggest that the operation of dubbing should be completed, as the half-trimmed state in which he was shown was far from making the most of his appearance. The *Spanish* were not remarkable; but the *Dorkings* were very good, and the pens exhibited by Mr. Statter and Mr. Newton were excellent. Of *Cochins* there were no less than thirty-two pens, many of them containing birds of striking merit. The chief prizes fell to the lot of Mr. Stretch, Captain Heaton, and Mr. Hindle. The *Hamburg* classes were hardly above an average; and in the *Golden-spangled* class it was difficult to find the requisite combination of comb, ear-lobe, and accurate markings of the feathers. The *Game Bantams* were a good class. One exhibitor of a good pen had the misfortune to be shut out from competition, as his birds were put into the wrong class, owing, it was stated, to his not having affixed the proper label to the hamper. The arrangements of the Show were good, and the weather remarkably fine, which, with the immediate proximity of Manchester, and the dense population of Lancashire, secured an influx of company which few of our agricultural shows can command.

The following is a list of the awards.

GAME (Black-breasted and other Reds).—First, T. Dyson. Second, J. Firth. Third, R. Parkinson. Highly Commended, T. Statter. Commended, J. Holme; G. Taylor. **Cockerel**.—First, J. Firth. Second, J. S. Butler. Highly Commended, W. Hargreaves. **Pullets**.—First, R. Parkinson. Second, T. Statter. Highly Commended, C. W. Brerley.

GAME (Any other variety).—First, J. Holme. Second, T. Dyson. Third, R. M. Harrison. **Cockerel**.—Prize, J. Firth. **Pullets**.—First, J. Hall. Second, W. Bourne.

SPANISH.—First, S. Siddall. Second, J. Clewes. Third, S. Tydaley. **Cockerel**.—First, H. Beldon. Second, N. Cooke. **Pullets**.—First, T. Rogers. Second, J. Siddall.

DORKING.—First, T. Statter. Second, J. F. Newton. Third, T. Crowther. Highly Commended, J. F. Newton; E. Smith. **Cockerel**.—First, T. Statter. Second, J. F. Newton. Highly Commended, S. Farrington. **Pullets**.—First, T. Statter. Second, E. Leech.

COCHIN-CHINA.—First, T. Thatch. Second and Third, Captain Heaton. Highly Commended, Captain Heaton. **Cockerel**.—First, E. Ramsden. Second, Captain Heaton. Highly Commended, S. Handley. **Pullets**.—First, F. M. Hindle. Second, Captain Heaton. Highly Commended, R. Ward; J. Frankland; J. Hartley; C. J. Samuels.

HAMBURG (Golden-pencilled).—First, Carter & Vallent. Second, A. M. Higgin. Third, A. Nuttall. Commended, J. Dixon; T. Wrigley. **Cockerel**.—First, A. M. Higgin. Second, A. Bamford. **Pullets**.—First, T. Wrigley. Second, J. Wellens. Highly Commended, A. Bamford; J. Firth.

HAMBURG (Silver-pencilled).—First, A. Royd. Second, C. Moore. Third, H. Beldon. Highly Commended, E. Hindle; J. Dixon. **Cockerels**.—First, J. Andrew. Second, A. Fielding. **Pullets**.—First, D. Illingworth. Second, E. Hindle.

HAMBURG (Golden-spangled).—First, J. Andrew. Second, H. Carter. Third, G. Whittaker. Highly Commended, J. Dixon. **Cockerel**.—First, J. Lancashire. Second, Hepworth & Coldwell. **Pullets**.—First, J. Andrew. Second, J. Ogden. Highly Commended, E. Smith.

HAMBURG (Silver-spangled).—First, J. Dixon. Second, J. Fielding. Third, J. Altham. Highly Commended, Mrs. Sharp. **Cockerel**.—First, H. Beldon. Second, R. Ward. **Pullets**.—First, E. Stevenson. Second, J. Collings.

HAMBURG (Black).—First, R. Goodwin. Second, J. Hope. Third, H. Beldon. **Cockerel**.—First, J. Dixon. Second, G. Whitaker. Highly Commended, R. Tattersall. **Pullets**.—First, J. Jaques. Second, R. Batterby.

ANY VARIETY NOT PREVIOUSLY CLASSED.—First, H. Carter. Second, J. Dixon. Third, J. Smith. Highly Commended, H. Lacy; W. Bowley. **Cockerel**.—First, J. Dixon. Second, J. Frankland. **Pullets**.—First, J. Dixon. Second, S. Farrington.

BANTAMS (Game).—First, J. W. Morris. Second, N. Cook. Third, J. D. Newsome. Highly Commended, J. Whitworth; W. Laursen. **Cock**.—First, E. M. Stark. Second, J. W. Morris.

BANTAMS (Any other variety).—First, H. Beldon. Second, E. Hutton. Highly Commended, C. Walker; R. Gledhill. **Cock**.—First, C. W. Brerley. Second, J. Magnall. Highly Commended, R. M. Stark.

DUCKS (Aylesbury).—First, E. M. Stark. Second, Mrs. Seamons. Highly Commended, Mrs. Seamons. Commended, D. Reynolds; F. W. Hindle.

DUCKS (Rouen).—First and Second, T. Statter. Highly Commended, J. Holme. Commended, E. Leech.

DUCKS (Any other variety).—First, J. B. Jessop. Second, J. Dixon.

GESE.—First, D. Reynolds. Second, D. Ashbrook. Highly Commended, D. Reynolds.

TURKEYS.—First, J. Dixon. Second, E. Leech.

The Judges were Mr. Teebay, Preston; Mr. J. H. Smith, Skelton, near York; and Mr. Harrop, Middleton.

SPEED OF CARRIER PIGEONS.—It appears from a recent trial made at Bourges, that Carrier Pigeons can still compete in speed with railways. Last week 145 Pigeons were liberated at Bourges at five o'clock in the morning, to decide a wager. The first prize was gained by a Pigeon which arrived at his Pigeon-house at Verriers, at fifty-four minutes past twelve. The last arrival was at eleven minutes past one. Thus, in less than nine hours, these birds performed a distance of 150 leagues, or 375 miles—a speed which no French railway can equal. (*The Building News*.)

TARPORLEY (CHESHIRE) POULTRY SHOW.

THIS was the first meeting of this Show, and it was remarkably well attended by all classes. The entry was good, and there were some very good birds exhibited.

SPANISH.—Prize, W. Woodley, Bunbury, Tarporley. Highly Commended, J. Sheen, Tilston.
DORKINGS.—Prize, J. Hinde, Utkinton. Highly Commended, S. Hignite, Ouston; Sir P. Egerton, Bart., M.P., Oulton Park.
GAME.—Prize, J. Sheen, Tilston. Highly Commended, O. Carter, Cote Brook.

HAMBURGERS (Spangled).—Prize, J. Sheen, Tilston. Highly Commended, Dr. Sellar, Tarporley.

HAMBURGERS (Pencilled).—Prize, Lord Binning, Eaton Banks, Tarporley. Highly Commended, Dr. Sellar, Tarporley.

ANY OTHER BREED.—Prize, S. Bogerson, Utkinton. Highly Commended, J. Sheen, Tilston; Lord Binning, Eaton Banks; Mrs. Carter, Iddenshale.
Ducks (Aylesbury).—Prize, Lord Binning, Eaton Banks. Highly Commended, S. Hignite, Ouston.

Ducks (Bouen).—Prize, S. Hignite, Ouston. Highly Commended, J. Young, Fouriesands.

TURKEYS.—Prize, S. Walley, Utkinton. Highly Commended, Sir P. Egerton.

GAME.—Prize, J. Sheen, Tilston. Highly Commended, Lord Binning, Eaton Banks, Tarporley.

Mr. Heath, of Nantwich, was the Judge.

LOSSES AT POULTRY SHOWS.

I WISH to call the attention of your readers to the conduct of the Committee at the Wakefield Show. My pen of Duckwing Bantams took the first prize there and disappeared. Mr. Crossland, the Secretary, wrote me word that they were gone, but the hamper directed to me was still there, so he believed they must have been stolen. This pen I had priced five guineas, as I usually do, but I believe it was worth more, and the same birds were entered for several other shows, so they are a serious loss to me.

Now, for several days I made no claim, but left it to Mr. Crossland to make inquiries if the birds could be heard of. At last, without my claiming anything, he sent me £4, saying he would send the remainder, but had no more money with him. Next morning, however, I heard from him, that the Committee disapproved of his having sent even the £4, saying all the Bantams in the Show were not worth £5 altogether. If so they must have taken a very great deal of trouble for a very poor result, for the Wakefield Show must have been a very shabby affair. So on the 12th I wrote to Mr. Wainwright, the general Secretary, urging my claims. After several days' delay he answers me, saying the Committee consider I am well paid already.

Now, I complain of this treatment. It is not that my loss (£1 5s.) is so much, but that I consider the conduct of the Committee dishonest. I do not believe I should have received the £4 even, if it had been left to them, for they seem to blame Mr. Crossland for sending it. One of their rules certainly is, that they will not be liable for any loss or mistake. But that must surely mean loss in going to, or returning from the Show, or the death of a bird there, for which they are of course not responsible. But it was in their power to have a stricter watch kept at the Show, and I think if a man has another's property committed to his care, and loses it through negligence, he is bound to make it good. Nobody would send to shows if, besides the risk of the railway journey, he thought his birds were not safe in the Show. If they are so negligent that they allow birds to be stolen from the Show, I believe they are legally bound to make it good, and that they are morally bound, I think, no gentleman can doubt.

Again, if there is no claim on the Committee, what is to hinder a dishonest member of the Committee, or untrustworthy servant, appropriating valuable pens to himself out of the Show, when such a careless watch is kept?—WILLIAM LAWRENSON, *Allestree, near Derby.*

[There is very little doubt that the Committee of the Wakefield Poultry Show are legally liable for the five guineas; but even if not compellable by law, yet it would be politic for a Committee under such circumstances at once to state their readiness to pay. Above all things they should neither offend exhibitors generally, nor the exhibitor who has been robbed in particular, by depreciating the merits and value of their birds. On the other hand, an exhibitor who loses his birds as Mr. Lawson lost his, should remember that the Committee make no profit out of an ex-

hibition, but endure much trouble and risk, with a chance of benefit only to the exhibitors. When such a loss does occur, we think that there should be mutual consideration; and if the Committee had come forward in a gentlemanly spirit, and claimed a fair deduction, Mr. Lawson, we think, as we certainly should have advised, would have agreed to be satisfied with the sum sent by Mr. Crossland.—Eds.]

LEIGH (LANCASHIRE) POULTRY SHOW.

THE above Exhibition of poultry is held in conjunction with the Leigh Agricultural Show, and time has proved that since the addition of this branch the annual meetings of this Society have continually increased in popularity, till at length the poultry to be met with at the Leigh Shows will hold good position among such meetings; and the continually thronged state of the show-yard thus set apart for poultry evinced that the general taste of the neighbourhood is decidedly favourable to poultry-culture. The Committee are justly entitled to every praise for the great care and attention they devoted to the fowls entrusted to them; and should they on future occasions carry out the numbers of the pens consecutively throughout the whole Show, they will certainly find it an improvement. This will also do very much to prevent the various mistakes arising from commencing the numbers afresh in each class—a feature our constant experience never knew introduced without leading to inevitable confusion. On the present occasion a pen of the best Black Polands with white crests were necessarily disqualified through being thus placed in the wrong class, although they would have been by very far the best pen if entered properly. Again, no doubt, the non-consecutive character of the numbers caused many pens of chickens to appear in the classes for adults and *vice versa*, to the compulsory discomfiture of the various exhibitors.

At this season of the year to expect adult fowls in good plumage would be to hope against conviction, there being, as anticipated, scarcely a pen of old birds in barely passable feather. No doubt this fact of moulting caused many owners to withhold forwarding their entries on the supposition they could not win. In reply it should be always remembered that at this time of year all parties are in the like "fix," so that to withdraw them from competition is mistaken policy.

Many of the *Game* chickens were exceedingly good, as were most of the *Hamburgs* also. The first-prize old Golden-spangled *Hamburgs* were undoubtedly a credit to any show. The classes for *Cochins* were especially good. In the old birds of this kind Captain Heaton headed the list with his well-known Partridge-coloured pen. These truly excellent birds are being sadly too heavily taxed by continuous exhibition to maintain health and condition, a month or two's quietude being now indispensable to future success. The *Game Bantams* were good; and the *Geese*, *Turkeys*, and *Ducks* were particularly so. Although the previous day's soaking rain had rendered passing to the ground a difficulty, a fine day for the Exhibition made all things satisfactory and pleasant, consequently a large attendance resulted.

GAME (Black Red).—Prize, A. Horrocks, Leigh. *Chickens.*—First, P. Unsworth, Lowton. Second, J. Haselden, Tyldesley. Highly Commended, P. Unsworth; C. W. Brierley, Rochdale.

GAME (Any other variety).—Prize, H. Smith, Bedford. *Chickens.*—First and Second, J. Wood, Haigh. Commended, C. P. Ackers, Bickershaw.

SPANISH.—First and Second, N. Cook, Atherton. *Chickens.*—First, N. Cook. Second, P. Unsworth.

COCHIN-CHINA (Any colour).—First, Captain Heaton, Manchester. Second, J. Elliott, Westleigh. Commended, Captain Heaton. *Chickens.*—First, S. Handley, Pendleton. Second, Captain Heaton. Highly Commended, Captain Heaton. Commended, N. Cook, Atherton; J. Elliott.

DORKINGS (Any colour).—First, S. Farrington, Astley. Second, J. Mangnall, Leigh. *Chickens.*—First and Second, J. Bullough, Atherton. Highly Commended, E. Leach, Rochdale; T. J. Lancashire, Bedford; S. Farrington, Manchester.

HAMBURGERS (Golden-pencilled).—First, C. W. Brierley, Rochdale. Second, T. Wakefield, Golborne. *Chickens.*—First and Second, J. Haselden, Tyldesley. Highly Commended, Miss H. Leigh, Bedford; S. Fielding, Middleton.

HAMBURGERS (Silver-pencilled).—Second, J. Platt, Deane. First, withheld. *Chickens.*—First, S. Fielding, Middleton. Second, J. Platt, Deane.

HAMBURGERS (Golden-spangled).—First, N. Marler, Denton. Second, H. Fletcher, Leigh. *Chickens.*—First, N. Marler. Second, G. Whitaker, Horwick. Highly Commended, G. Whitaker.

HAMBURGERS (Silver-spangled).—First, J. Fielding, Middleton. Second, J. Haselden, Tyldesley. *Chickens.*—First, J. Haselden. Second, L. Kirkman, Leigh; J. Fielding. Highly Commended, J. Haselden.

POLANDS (White-crested).—First, S. Farrington, Astley. Second, H. Smith, Bedford. Commended, S. Farrington. **Chickens.**—First and Second, S. Farrington.

POLANDS (Any other variety).—First and Second, S. Farrington, Astley. **Chickens.**—First and Second, S. Farrington.

GAME BANTAMS (Any variety).—First, R. Gerrard, Atherton. Second, A. Horrocks, Leigh. **Chickens.**—First, J. Platt, Deane. Second, C. W. Brierley, Rochdale. Highly Commended, J. W. Morris, Rochdale; W. Eaton, Westhoughton; R. Gerrard; N. Cook, Atherton. Commended, C. P. Ackers, Bickershaw.

GAME BANTAMS (Any other variety).—First, S. Farrington, Astley. Second, J. Mangnall, Leigh. **Chickens.**—First, C. Walker, Halifax. Second, R. Gerrard, Atherton.

ANY DISTINCT VARIETY.—First, F. Bullough, Chowbent. Second, J. Elliott, Westleigh. **Chickens.**—First, E. Leech, Rochdale. Second, J. Elliott. Highly Commended, J. Elliott. **Cock.**—First, A. Horrocks, Leigh. Second, C. P. Ackers, Bickershaw.

DUCKS (Aylesbury).—First, E. Leech, Rochdale. Second, J. Dean. **DUCKS (Rouen).**—First, T. Fothergill, Lostock. Second, T. Wakefield, Golborne. Highly Commended, E. Leech, Rochdale; J. Bullough, Atherton; C. P. Ackers, Bickershaw.

ANY VARIETY.—First and Second, C. P. Ackers, Bickershaw. Highly Commended, W. Sutton, Haydock (Brown); T. Wakefield, Golborne (Brown); S. Farrington, Astley; F. W. Earle, Prescott.

GESE.—First, J. Southern, Kenyon. Second, L. Walls, Westhoughton. **Goosings.**—First and Second, J. Southern.

TURKEYS (Any breed).—First, T. Fletcher, Bolton. Second, G. Jackson, Bedford Lodge (Black).

The Judges were Mr. Hewitt, of Eden Cottage, Sparkbrook, Birmingham; and Mr. Smith, of Middleton.

DODDINGTON (CHESHIRE) POULTRY SHOW.

THIS Show was held on the 15th inst. Some of the poultry were remarkably good, particularly the first-prize pens of Spanish, Game, and Dorking.

SPANISH.—First, W. Woolley, Bunbury, Tarporley. Second, J. Groucott, Houghton. Commended, A. Moses, Weston; C. Groucott, Bunbury.

DORKINGS.—Prize, T. Burgess, Burleydam. **GAME.**—First, T. Burgess, Burleydam. Second, T. Whittingham, Batherton. Highly Commended, S. Edwards, Nantwich; C. Groucott, Bunbury. Commended, T. Whittingham; S. Acton, Hatherton House.

ANY OTHER VARIETY.—First, G. Williamson, Nantwich. Second, T. Burgess, Burleydam. Highly Commended, G. Williamson. Commended, C. Groucott, Bunbury; T. Parton, Chorlton.

TURKEYS.—First, T. Burgess, Burleydam. Second, Mrs. Featherstone, Hunsterston. Highly Commended, Mrs. Turner, Blackenhale. Commended, O. Lunt, Rope.

GESE.—First, T. Burgess, Burleydam. Second, T. Whittingham, Batherton. Highly Commended, J. Edwards, Weston; W. Smith, Hunsterston. Commended, T. Whittingham; O. Lunt, Rope; Mrs. J. Edwards, Hunsterston.

DUCKS.—First, T. Whittingham, Batherton. Second, Miss R. Hayward, Blakenhale. Highly Commended, T. Burgess, Burleydam. Commended, J. Edwards, Doddington; S. Sutton, Haslington; C. Barnett, Blakenhale.

Mr. Heath, of Nantwich, was the Judge.

STAFFORDSHIRE AGRICULTURAL SOCIETY'S POULTRY EXHIBITION.

THE whole of the specimens competing at this Meeting were by the rules of the Staffordshire Society confined exclusively to birds of the present year—a feature that necessarily added most materially to the interest of those poultry-amateurs who were anxious to ascertain the probable success of our principal breeders at the large exhibitions now so closely approaching. Although a very few cases did occur that left the determination of age a somewhat open question, it is most gratifying to us as public journalists to record the fact they were far less, in point of numbers, than our past experience taught us to anticipate. Decision on the part of our poultry judges, by disqualification, has doubtless done much to put down a practice that tends in no slight degree to daunt the more scrupulous exhibitor, who would only exhibit fairly and honourably undoubted chickens.

The morning of the Show was a really bright sunshine, though towards the evening the anticipated change was verified. Nevertheless this Meeting was exceedingly well attended, every train adding its hundreds to the general numbers that during the day visited the showyard regardless of the weather.

In this Exhibition the *Game* classes stood first. In the black-breasted and other Reds a most unusually promising pen of Black Reds, exhibited by Mr. John Stubbs, of Stafford, were placed first, and we certainly expect to hear of them as long as standing favourably on other prize lists. In the class for Any other variety of Game fowls, Duckwings and Greys stood pre-eminent although some very good Whites were in the field.

the Stafford Show bespeaks that this aristocratic breed still has many staunch supporters, and that they who win in 1864 must look keenly to their colours.

In *Grey Dorkings* Viscountess Holmesdale left competition quite in the rear, although several really superior pens were on the lists. In *Silver Grey Dorkings* the Rev. Thomas O'Grady, of Ashbourne, took both prizes, some excellent White ones also competing.

In *Buff Cochins* it will not be a matter of surprise to most of our poultry readers to find Mr. Stretch, of Liverpool, heading the poll, Viscountess Holmesdale being the exhibitor of a very reputable second-prize pen. In the Brown and Partridge-feathered varieties of Cochins, Mr. Edward Tudman, of Whitchurch, stood quite aloof from his rivals. Surely this excellent pen could not be the pen delayed till too late for competition at the recent Ilington Show, for such being the case the Railway Company were undoubtedly the cause of defeat in that instance. In colour they are the most perfect we have seen for some time past, and both they and the second-prize pen are well-matured chickens.

The competition in all four classes of the *Hamburghs* was universally good. There was, in fact, scarcely one indifferent pen throughout.

The *Turkeys* were really first-rate, being well grown and in equally good condition.

In *Geese* and *Aylesbury Ducks* Mrs. Seamons held undoubted sway, so much so as to distance competition altogether. In *Rouen Ducks* several excellent pens were entirely thrown out by the admission of a faulty-billed Duck. We must again state that green-billed Ducks are inadmissible altogether. Three pens of excellent *Buenos Ayrean Ducks* were present, although we have seen them exhibited in better feather.

In the class for Extra poultry, for which no prizes were offered, we particularly noticed some capital *Grey Geese*, and a no less covetable pen of *White Cochins-China* fowls.

We cannot conclude our remarks without expressing our satisfaction in finding that year by year the progressive improvement of this Society has been marked—certainly in no instance more so than on this occasion. The untiring efforts of the Committee to insure public good opinion have thus realised their just reward.

GAME (Black-breasted and other Reds).—First, J. Stubbs, Stafford. Second, H. Snowden, Bradford. Highly Commended, J. Stubbs; W. T. Locker, Stafford. Commended, W. T. Everard, Leicester; W. T. Locker.

GAME (Any other variety).—First, W. T. Everard, Leicester. Second, G. Swift, Stone. Highly Commended, W. Pares, Derby; T. Ball, Stone.

SPANISH.—First, J. Clews, Wallsall. Second, G. Lamb, Wolverhampton. Highly Commended, W. Woolley, Tarporley; J. R. Rodbard, Bristol; J. Stephens, Wallsall.

DORKINGS (Coloured, except Silver Greys).—First and Second, Viscountess Holmesdale, Linton Park, Staplehurst. Highly Commended, J. Copple, Prescott. Commended, E. Tudman, Whitchurch.

DORKINGS (Silver Grey or White).—First and Second, Rev. T. O'Grady, Ashbourne (Silver Grey). Highly Commended, W. T. Everard, Leicester (White). Commended, Lady Bagot, Rugeley (Silver Grey).

COCHINS-CHINA (Cinnamon or Buff).—First, T. Stretch, Ormskirk. Second, Viscountess Holmesdale, Linton Park, Staplehurst. Commended, C. Banbury, Wolverhampton; G. Lamb, Wolverhampton.

COCHINS-CHINA (Brown or Partridge-feathered).—First, E. Tudman, Ash Grove, Whitchurch. Second, T. Stretch, Ormskirk. Highly Commended, E. Tudman.

HAMBURGH (Golden-pencilled).—First, Messrs. Carter & Vallant, Poulton-le-Fylde. Second, J. Westman, Stafford.

HAMBURGH (Silver-pencilled).—First, C. Moore, Poulton-le-Fylde. Second, J. Holland, Chesnut Walk, Worcester. Highly Commended, G. Griffiths, Worcester; Viscountess Holmesdale, Linton Park, Staplehurst. Kent. Commended, J. E. Powers, Biggleswade, Beds.; G. Griffiths, Worcester; Mrs. Wolferstan, Stafford Hall, Tamworth.

HAMBURGH (Golden-spangled).—First, J. Leech, Newcastle. Second, T. May, Wolverhampton. Commended, G. Brook, Huddersfield; J. Leech.

HAMBURGH (Silver-spangled).—First, Mrs. Wolferstan, Stafford Hall, Tamworth. Second, J. Leech, Newcastle. Commended, E. T. Holden, Wallsall.

TURKEYS.—First, J. Coxon, Freeford, Lichfield. Second, W. T. Lockyer, Tillington. Highly Commended, J. Brassington, Barlaston, Stone. Commended, Mrs. Wolferstan, Tamworth; W. T. Locker, Tillington, Stafford.

GESE.—First, Mrs. Seamons, Hartwell, Aylesbury. Second, J. Brassington, Barlaston, Stone.

DUCKS (White Aylesbury).—First, Second, and Highly Commended, Mrs. Seamons, Aylesbury.

DUCKS (Rouen).—First, Mrs. C. Browne, Shrewsbury. Second, J. E. Rodbard, Bristol. Commended, Mrs. C. Browne; J. E. Halbert, Cirencester.

DUCKS (Black East-Indian).—First, J. E. Jessop, Hull. Second, Mrs. Wolferstan, Tamworth. Highly Commended, W. T. Locker, Stafford.

EXTRA POULTRY.—Highly Commended, E. M. Lord, Wolverhampton (White Cochins-China). Commended, Rev. E. C. Perry, Stafford (Grey Geese).

Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, near Birmingham, acted as the Arbitrator.

WATERFORD FARMING SOCIETY'S POULTRY SHOW—SEPTEMBER 17TH.

On this occasion the following were the awards:—

SPANISH.—Medal, W. Joyce. Commended, H. Jones.
COCHIN-CHINA.—Medal, W. Joyce. Highly Commended, C. N. Bolton.
 Commended, H. Jones.
DORKING.—Medal, J. Wall. Commended, W. Joyce.
HAMBURGERS.—Medal, C. N. Bolton. Commended, J. Wall.
DUCKS (Aylesbury).—Medal, C. N. Bolton. Commended, W. Joyce.
DUCKS (Rouen).—Medal, W. Joyce. Commended, C. N. Bolton.
FANCY CHICKENS.—Medal, W. Joyce. Commended, H. Jones.
GREEN.—Medal, F. G. Bloomfield.
BEST COLLECTION OF POULTRY THE PROPERTY OF ONE EXHIBITOR, NOT LESS THAN FOUR LOTS.—Silver Medal, W. Joyce.

[This ought to be called "Joyce's Exhibition" we think.]

WHITCHURCH AND MALPAS POULTRY SHOW.

THIS very successful Meeting took place on the 23rd inst., and some very good specimens of every class were exhibited.

SPANISH.—First and Second, W. Woolley, Bunbury.
DORKINGS.—First, E. Tudman, Ash Grove, Whitchurch. Second, T. Burgess, Burleydam.
GAMES.—First and Second, T. Burgess, Burleydam. Highly Commended, Miss Sadler, Heath Cottage, Whitchurch; J. Plate, Newton.
DUCKS (White Aylesbury).—First, J. Ravenshaw, Ash, Whitchurch. Second, J. Groucott, Haughton. Highly Commended, T. Ravenshaw.
DUCKS (Rouen).—First, J. Thurnfield, Lightwood Green. Second, T. Burgess, Burleydam. Highly Commended, T. Burgess.
GREEN.—First, T. Burgess, Burleydam. Second, G. Richards, Ash, Whitchurch.
TURKEYS.—First, J. Lowe, Stockton Hall. Second, T. Burgess, Burleydam.

The Judge was Mr. Heath, of Nantwich.

PERFORATED ZINC FRAMES—DRIVING BEES IN BAR-HIVES.

IN reply to "A. B. C." I may state that I cannot see much difference between his perforated zinc frames and Mr. Woodbury's wooden ones. They would not facilitate his seeing the work a whit better—from the side window I mean.

With regard to driving bar-boxes, I must say that I often resort to this practice as involving much less trouble than any other mode of expelling bees from such hives—that is to say, where the bees are in force. But then my hives are chiefly located in bee-houses, and not in the open air, as Mr. Woodbury's are. This makes all the difference as to the ease or difficulty of removing bar-combs. It is most troublesome work in a bee-house. For this reason I carry my hives out and drive them, which I find the quickest method. Will Mr. Woodbury pardon my questioning his opinion as to bees been "driven upwards" by simply removing the top board of a bar-hive? Certainly they will not be easily driven thus.—B. & W.

PARTHENOGENESIS—REGICIDAL ATTACKS ON QUEENS.

THOUGH familiar with the works of Bonner, Huish, Huber, Bevan, and Dr. Dunbar, &c., it is only a few weeks since I knew anything respecting the doctrine propounded by Dzierzon of unmated queens being able to lay fertile or rather drone eggs. I am anxious to possess Mr. Woodbury's evidence, being somewhat incredulous respecting the statement.

After hearing of parthenogenesis, I took the queen from a hive in order to get a few artificial ones. I got several just as they were about to leave their cells. Of two in particular, one was hatched on August 21st, and the other on the 23rd, two days after. The one born on the 21st was allowed free egress, and on the 1st of this month was put into a newly-made glass unicomb with a goodly number of bees. They were fed liberally, and on the 7th I found her laying in the new-made comb. She proved very fertile, and at this moment eggs (workers'), and sealed-up brood are abundant. But more of her immediately. The other queen, born on 23rd, was put into a box with a little comb and honey, and with nearly the same quantity of bees, and in a place where the temperature was about equal with the place where I

had stationed the glass unicomb. Neither queen nor bees were allowed egress beyond the bounds of a room in which they could take an airing. Yesterday (September 21st), the queen being now twenty-nine days old, I dislodged her and the bees from the box; but although a little comb was made, and some food stored up, there was not a vestige of life in the form of brood. If Huber be right, she is now destined to be the mother of drones only. I have not learned how long a time must elapse before she begins to lay in her unimpregnated state.

But with the queen born on the 21st, in the glass unicomb, though so fertile, the bees acted strangely yesterday. Their becoming unsettled, and buzzing a good deal, led me to open the shutter, when I found a queen treated as a strange queen, and closely matted over by a cluster of bees. I thought, as there was no other queen in the hive, that a stranger had by some strange mistake entered, and dispossessed the rightful sovereign. But, no: all my other hives had their respective queens, and it was their own rightful sovereign they were strangling. For several hours I laboured to relieve her, but the persecution never abated, and this morning she was lying almost suffocated on the bottom of the hive, firmly enclosed in a cluster of bees. I took her from them, fed and revived her, and after a lapse of six hours have again presented her. But she has again been seized and imprisoned as a stranger. I am confident they will kill her. During the time I removed her the bees were quite tranquil, and busy emptying their feeding-trough.

Queens evidently leave a scent behind them in their course, which the bees can detect several hours afterwards. Her track or trail, I apprehend, is the medium of making her presence in the hive most generally known. Can her scent or odour, then, have undergone some change in its character, offensive or otherwise, that the bees no longer recognise their own mistress? Or, when from any cause it is necessary to have a new queen, does the instinct of the bees lead them to dispatch the old whilst material for making the new is to be had?—R. S.

P.S.—September 23rd, after ten hours' confinement the queen has now in some measure regained her liberty.

[Dzierzon's works have not been translated, but the evidence in support of parthenogenesis is detailed in Siebold's "True Parthenogenesis in Moths and Bees," translated by Dallas, and published by Van Voorst. In Nos. 25 and 30 of THE JOURNAL OF HORTICULTURE are articles from my pen on the subject. The first recapitulates the facts and reasoning in support of the doctrine, whilst the second details my own repetition and verification of Siebold's microscopic investigations, which really place it beyond cavil.

Huber was mistaken in limiting impregnation to a period of twenty-one days. I have known a delay of thirty days without any ill result. Your virgin queen reared and kept from the drones so late in the season may not—nay, most probably will not—lay eggs until the spring; but lay fertile eggs she most assuredly will, if you can keep her alive long enough—drone eggs, if she remain a virgin—worker eggs, if by any chance impregnation should have taken place. Let no one fancy that I speak thus positively without sufficient warrant. I have repeatedly reared queens too late in the autumn for impregnation to be effected, and these have invariably turned out drone-breeders the following spring, after which a *post mortem* examination has demonstrated the fact of their virginity.

Regicidal attacks by workers on their own queens are much more frequent than is generally imagined. Many instances of this kind have already been related by me in the pages of THE JOURNAL OF HORTICULTURE, but I have not yet been able to frame any theory by which they may be satisfactorily accounted for.

There is no doubt that queens leave a track or trail behind them which is noticed by bees some time afterwards; but although bees recognise their own queen when brought into contact with her, it is by no means certain that they can identify the track or trail of any particular queen after she has passed. Besides, what ground have we for presuming a sudden change in the scent or odour of a young and fertile queen that is apparently almost worshipped by her subjects one hour, only to be rigorously imprisoned the next, and ultimately put to death without mercy by these same subjects, literally the children of her

own body? Virgin queens appear especially liable to these assaults, but in their case they seldom terminate fatally. The period of their return from a successful wedding flight seems also to be frequently selected for these attacks, since more than once on releasing a young queen from imprisonment I have plainly distinguished the undoubted sign of fecundation described by Huber. A mature and prolific queen may survive the first few attacks; but, when once commenced, they are generally repeated at uncertain intervals until they terminate fatally. This sometimes takes place with perfectly capable queens in the prime of life, and even occasionally at a season when their loss entails the certain destruction of the whole community. As I said before, I can frame no theory which will account satisfactorily for these apparently inexplicable facts.—A DEVONSHIRE BEE-KEEPER.]

HONEYDEW, &c.

COLONEL NEWMAN has quite mistaken my meaning in supposing that I doubted the existence of honeydew, so-called; I have never doubted it, having almost every summer seen something of it in dry hot weather. I have also had ocular proof, once only, however, that bees will frequent the oak when covered with honeydew. What I doubt is if bees often collect it. Colonel Newman, I perceive, does not say that he has seen hive bees collect it, or how often he has seen them. My notion is that they collect it very rarely, and only in bad seasons, just as they frequented our raspberry bushes last summer, when honey proper was scarce. Can no one else of your numerous apianian readers throw light upon the subject?

What will Colonel Newman say if "B. & W." with the convivial *nom de plume* be the same individual as "A COUNTRY CURATE" of former days—now in truth "a benedict clergyman?" To help him to recover the shock I will at once put in a disclaimer to the reading which attributes my assumption of the initials "B. & W." to my presumed admiration for or indulgence in that vulgar beverage, "brandy and water." I can assure him that I neither smoke nor tipple, and I hope he will believe me. In a more charitable spirit the excellent Editor-in-chief of this periodical interpreted "B. & W." to mean "Back & Welcome," thus expressing his own kindly feeling at hearing of my safe return home from the antipodes. My own explanation remains to be given. I assumed these initials in the joy of my heart at finding myself promoted to a benefice in the advanced diocese of "Bath and Wells." Here I am anchored after a circumnavigation of the globe, and able to continue my hobby of bee-keeping with little prospect of interruption. Colonel Newman will understand by this confession that "A COUNTRY CURATE," who "was then an experimental bee-keeper, and would not allow of many failures," still survives as an experimental bee-keeper, and does not allow of many failures.—B. & W.

DRIVING BEES INTO EMPTY HIVES.

I AM exceedingly obliged to Col. Newman for his kind wishes, and highly appreciate his good opinion, whilst I am perfectly certain that his observations are never penned in an unfriendly spirit.

In reply to his question as to how often the experiment has succeeded of depriving bees of the whole of their combs, and driving them into a new hive, I may state that I performed it on two swarms of the current year, purchased in the country in the beginning of July. These I drove out of their well-filled hives, as related in page 78, and placed them in boxes furnished only with a few pieces of empty guide-comb attached to the bars. On bringing these two colonies home last week, I found both boxes filled with combs and crowded with bees, the nett weight of each being about 20 lbs. My only other experiment of this kind was made on the 22nd of June, 1861, with a purchased swarm which had issued on the 9th of the previous month. This I drove into a perfectly unfurnished straw hive; and although he season did not permit of its doing quite as well as in the two more recent instances above related, it made combs and partially stored them. A little food would have enabled

combs and their personal services for the propagation of Ligurians.

Although the three instances above related are the only ones in which I have tried the experiment during summer, I am in the habit of forming many stocks every autumn, by driving condemned bees for all the old-fashioned bee-keepers. I am acquainted with within a radius of four or five miles of my residence. These I bring home and put into frame-hives (generally two or three lots of bees in each hive), furnished with such pieces of comb as I possess, supplemented, possibly, by a little brood-comb or nearly empty comb cut out of their own hives, and purchased of their proprietors. Liberal feeding sets these populous colonies comb-building, and usually stimulates their queens to recommence egg-laying, so that the result is a number of strong and healthy stocks, which rarely fail to survive the winter, and by their prosperity in after years fully repay their cost and the time and trouble devoted to saving their lives by—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

TOULOUSE GRESE (A Great Goose).—They are much larger than any of our common English birds. They form an excellent cross. That with the Chinese is not judicious, as, even if increase of weight were attained, it would not be of choice quality. The merits of Toulouse are large size, great weight, and exquisite quality. We have seen them 25 lbs. each, and 18 lbs. in running condition.

EAR-LOBES OF BLACK BANTAMS (Mrs. H. T.).—It is not essential for Black Hamburgs to have white deaf ears, because the lack of them is not a disqualification. Instance: If all the competitors in a class had red ears the prizes would be awarded. If out of twenty competitors only three had white deaf ears, and in every other particular the pens were equal, the white deaf ears would turn the scale certainly.

POULTRY SHOWS (An Exhibitor).—There is no Journal in which "all" poultry shows are advertised. Committees make a great mistake in not advertising, for there is no doubt many persons, like yourself, "would send birds to many shows which are not advertised did they know that these shows were to be held." It is not uncommon for a Black Spanish fowl to acquire a white plumage by moulting.

GROWTH OF FOWLS (A Poultry Fancier).—The answer to all your questions must depend much on the condition in which birds are kept: thus a well-fed Dorking or Cochins will be full grown at eight months, but it will not be at its heaviest. A Spanish fowl takes rather longer. If in perfect health, and the weather be favourable, a fowl will moult thoroughly in two months. The older they are the longer the process. If a Cochins is to weigh 10 lbs. at maturity, we should be content to find him weighing 5 lbs. at four months, or even 4 lbs. A pound per month is good growth.

FEEDING POULTRY FOR EXHIBITION (P. B.).—Feed your Dorkings frequently on ground oats mixed with milk. Do not shut them up. Wash their legs and feet before they are sent. Feed the Aylesbury Ducks well on oats and bran, and give them very clear spring water. Let them out in the meadows only when the frost is on the grass—this will help to keep their bills pale, and if they are yellow they will not win.

VULTURE HOOKS IN COCHINS-CHINAS (White-Cochin-Breeder).—Vulture hooks have never been deemed desirable in any breed of Cochins, and have always been considered a disadvantage, amounting almost to disqualification. Some Brahmas are shown with this appendage, but they are never prizetakers. They belong only to the Sultans, Parmigans, and some others.

CREST OF THE CRÈVE CŒUR (Idem).—It is better that Crève Cœur should have no white feather in the crest; but, like Poland, they get them as they grow older. The crest of the Crève Cœur is totally different from the Feland, inasmuch as it falls back like a Lark crest, and is not required to be more than that. We will describe them next week.

DISCHARGE FROM FOWL'S NOSTRILS (W. W. Cooke).—It would have made the question easier to answer if you had stated what the breed is which you think have "the blacks," as some are not liable to the diseases others are prone to. If they are suffering only from cold, bread steeped in strong ale, and given three times per day, will cure them. If they are Spanish, and have the black rot, which comes with discharge and ends in a positive wasting, it is incurable.

FEEDING DRIVEN BEES (S. D. S.).—Driving bees into empty hives is dangerous work which should be attempted by none but an experienced apianian, and by such a one only when he has an especial object in view. You will see by an article in another column that Mr. Woodbury has done it only on three occasions during summer when he was in urgent want of broodcombs. The formation of stocks in autumn by driving condemned bees is a different matter altogether, and is a very interesting experiment if performed by those who do not mind the trouble and expense of the copious feeding necessary to enable the bees to furnish their hives with combs, and store these combs with food before winter. You had better permit your old stock to swarm next summer, and unite it to the swarm by driving in the autumn, or drive and unite the bees to another stock if you are desirous of breaking it up at once.

BEES ATTACKED BY WARS (Gardens).—Release the bees immediately, and if they are not dead (confinement by means of putty being very likely to put the finishing stroke to the mischief which was in progress), ascertain their state by turning the hive up towards evening. If it be still populous the bees will probably hold their own, by year simply contracting the entrance so as to admit of the passage only of a single bee. If it be weak the entrance should also be contracted, but the attack should be eluded by removing the colony to a new situation at a distance of not less than a mile and a half. In a few weeks the autumnal frosts will probably rid you of the plague of wars, and then the persecuted bees may be restored to their original abode.

WEEKLY CALENDAR.

Day of Month Week.	Day of Week.	OCTOBER 6—12, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. a.	
6	Tu	W. Withering died, 1799. Bot.	61.7	44.3	53.0	20	10 46	27 46	moon.	23 2	23	11 46	279
7	W	Gomphrenas flower.	62.7	44.3	53.5	18	12 6	25 5	25 0	57 2	24	12 3	280
8	Th	Autumn Crocus flowers.	61.2	41.8	51.5	19	13 6	22 5	30 1	19 3	25	12 30	281
9	F	Cyclamenes (some) flower.	60.2	42.7	51.4	20	15 6	30 5	36 2	39 3	26	12 36	282
10	S	Lonicer born, 1523. Bot.	61.3	48.8	52.5	21	17 6	18 5	43 3	0 4	37	12 52	283
11	Sun	19 SUNDAY AFTER TRINITY.	61.7	42.7	52.2	19	18 6	16 5	52 4	18 4	28	13 8	284
12	M	China Pinks flower.	60.8	42.2	51.5	20	20 6	13 5	0 6	42 4	●	13 23	285

From observations taken near London during the last thirty-six years, the average day temperature of the week is 61.3°, and its night temperature 43.1°. The greatest heat was 79°, on the 6th, 1824; and the lowest cold, 25°, on the 11th, 1860. The greatest fall of rain was 1.00 inch.

KING CROQUET AND FLOWER-BEDS.



NEW monarch has entered our gardens—an innovator, a tyrant. Perhaps—for there is hope even in the worst cases—he may become an improver, or rather he may cause improvement. His name is “King Croquet.” Hundreds, perhaps thousands, of ladies are his devoted servants, and during the last spring and summer have been each week extending his dominions; and, of course, where ladies take the lead gentlemen follow—bound thereto by duty—doubly bound by inclination.

Your poetic readers will remember Cowper's lines descriptive of the wonders wrought by Brown, the rural designer of the last century—

“Lo! he comes!
Th' omnipotent magician, Brown, appears.
He speaks—the lake in front becomes a lawn.”

Now, this present tyrant, King Croquet, does not turn lakes into lawns, but at any rate he is fast turning flower-beds into lawns. For instance: There is my neighbour the Vicar of Blankton, a rigid old bachelor, yet having many nieces. He therefore must make room for Croquet on his lawn; and lo and behold! his pretty flower-beds are nearly all gone. Is not Croquet a king? Then there is my new neighbour, the recently appointed Rector of Dashborough, in laying out his garden (new rectors have new tastes, or, as the Scotch say, “New lairds mak new laws”), has just squeezed in two or three beds under his drawing-room windows, but King Croquet has all the rest of the lawn to himself. Is not Croquet a tyrant? Then there is the dear old Incumbent of Thorp-Sleepy, with an austere wife, and six daughters exceedingly like mamma. Dear old man! he told me in strict confidence and with a woeful smile, that “he was not only hen-pecked but chicken-pecked.” Well, of course, his hobby—some nice low-standard Rose-beds, are clean swept out of the way to make room for Croquet. But worst of all—for there is yet a worst—there is the Squire of Champaign, who has two little square flat fields of lawn on two sides of his house; he, having given up one entirely to Croquet, has covered up the beds on the other side for uniformity's sake. Is not King Croquet a despotic monarch indeed? Wherever I look, on whatever side of of me I glance, I find that during this year's spring and summer Croquet has reigned supreme; and, rely upon it, reign on he will for many a year, for Croquet is a famous game, it amuses all, and mamma's of large broods of marriageable pullets tell me it is decidedly conducive to matrimony.

But is there no hope? Is all dark—no light in the picture? Must Flora vanish? I trust not. A tyrant has come indeed, but another is gone. For the last ten years we proprietors of small gardens have had the Gera-

nium fever (usually of a very, Scarlet type)—forgive the pun, dear reader. Why, on my little lawn I had eighteen beds. Happily I was not so deeply guilty as some of my neighbours, for I did not destroy my dear old mixed borders. But it has been Geraniums everywhere; for Calceolarias, Petunias, and Verbenas have not borne their fit proportion, being more difficult to keep alive and healthy during the winter. My house has for seven months of each year been Geranium-ridden—laundry full, study windows full, dressing-room ditto; and if I go down into my cellar I knock my head against Tom Thumbs hung up (not for their sins as they ought to have been), from the ceiling, but to be planted out next year.

Now I foresee that this Geranium rage will—must—decline before King Croquet; and is there much cause for regret if it does so decline? I think not. Have we not been guilty of a kind of floral elephantiasis, nurturing one kind of plants, “bedding plants,” to the great injury of others—one large swollen red limb or feature, say red nose, while the other features have dwindled and shrivelled to nothing?

At the same time let no reader think that I am insensible to the great beauty of a bed of Geraniums. Far from it: but there are other flowers of equal beauty. Then, too, the bedding plants have become border plants, turning out the rightful inhabitants—the fine, grand, time-honoured, herbaceous, shrubby, sub-shrubby, and bulbous plants. Also, let it be remembered I speak only of small gardens, not of the gardens belonging to our great country houses, where there is room for everything in large portions. But as an example of what I think a garden ought to be, let me speak of one belonging to a near neighbour of mine.

This gentleman would not allow his garden to be dressed out like a “nigger girl,” all red and flaring, but would preserve his borders at least from the intrusive bedding plants. I paid him a visit last April. His garden, though small, was a marvel of beauty. At every five paces of his long border there rose the stately stem and glorious foliage of the yellow Fritillaria; at other distances other colours of the same kind of plants. Then there was every sort of Anemone, from the wild white to the most richly-hued double; “Polyanthus of unnumbered dyes” everywhere; Auriculas; patches of Arabis, and yellow Alyssum, and many other flowers whose names I know not. Indeed, my friend's border was exquisitely beautiful, and not the beauty of flower alone but of leaf. Now had my worthy neighbour yielded to the fashion of the day, this marvel of beauty which I beheld would at that time of the year have been merely a marvel of mould; for say what one will, you cannot grow even bulbs with bedding plants, for if left they are in the way, and if removed they are unripe and so injured. This I found to be specially true of the scarlet Turban Ranunculus, though scarcely a bulb. I must add that I again saw my friend's garden in June, then in July, then lastly in August; and at all times, owing to his cultivating the herbaceous and shrubby flowers, his borders looked pleasing to the eye.

Now, I fondly hope that this despotism of King Croquet may result in good, by bringing us back to the dear old borders with a sufficiency of beds boasting the richest hues which bedders can afford, but not a whole lawn full of beds. King Croquet is fast driving, by force of his cannon-balls, bedding plants, if too numerous, to the right-about. The revolution has begun. "There must be room for Croquet," cry all the girls; so there cannot be room for so many beds. King Croquet forces his way with his *Armstrong* guns, for he is a warrior as well as a monarch up to the times. Let us guide the revolution, and it will become a reformation. Let the peer or the millionaire have various kinds of gardens—they have room, and give whole acres to bedding plants. Be it so: but we little people must make the best use we can of our little means. So let us have various flowers, especially plenty of spring flowers and lots of Roses, bedding plants, and border plants—no prominence given to one kind, but some of all.

"I'll take the showers as they fall,
I will not vex my bosom;
Enough, if at the end of all
A little garden blossom."

But let it blossom, say I, with some of many kinds of flowers.—WILTSHIRE RECTOR.

MR. DONALD BEATON.

SCARCELY a week passes but we have inquiries from some of our numerous readers respecting the health of Mr. D. Beaton. So frequent have these inquiries become, and so general does the interest in our good friend seem to be diffused, that we feel it is necessary we should say a few words by way of satisfying this feeling of solicitude. We are happy to be able to say that Mr. Beaton is physically in the enjoyment of the most perfect health; or, as he remarked the other day when we had the pleasure of visiting him, that he was "better now in health than he has been for the last forty years."

The affliction from which Mr. Beaton has been suffering is the rupture of one of the small blood-vessels of the brain. The effusion of blood on the brain caused a slight disturbance of that organ, and affected his memory in an unusual and very extraordinary way. While his memory was perfectly retentive of the leading events of his life, although he could recognise every friend he had ever known, and was as familiar with the distinctions of plants as he ever had been, still he had lost the faculty of naming both his friends and his plants. He knew all perfectly—he conversed freely on any and every topic, but when he came to the proper name of a person, place, or thing, his memory entirely failed him. Still, however, he never withdrew even for one day from the active duties of his garden, and there, in his closely-packed little "experimental," he might be seen from day to day and all day long tending and even talking to his garden favourites.

In such a state it was necessary that Mr. Beaton should desist from literary work until, by the absorption of the extravasated blood, the cause of the affliction should be removed, and until sufficient time had elapsed to permit a healthy restoration of the functions of the parts. It is with much pleasure that we are enabled to assure our readers that this process has proceeded so far that Mr. Beaton is now enabled to name almost all his friends, and particularly those with whom he comes in frequent contact; that he talks fluently about his plants, and that he is now rapidly progressing towards a state which warrants us in hoping that we shall again have his hearty and genial communications in these pages.

Although Mr. Beaton cannot contribute to our instruction and amusement as was his wont, by those communications which of themselves have created and diffused the taste for the modern style of flower-gardening in this country, he is labouring still in another field. Who can tell what stores of beauty are yet to issue from that "experimental"? We have already been charmed with those lovely "Nosegay" Geraniums which owe their origin to Mr. Beaton's skill, and, above all, are we indebted to him for that glorious "tella," of which we heard one of our most eminent horticulturists say, "If he never raised anything else, that is enough to immortalise him." On a visit we recently paid

of seedling Geraniums of all sizes, shapes, and colours such as we never saw before. Among these there were many that attracted our notice by the immense size of the flowers, some of which were as large as a crown piece, and by the novelty and extreme richness and beauty of their colours. One called *Ossian* has already been sent out. The colour is of the richest velvety deep scarlet, with an azure hue at the base of the petals resembling that hue seen in *Cactus speciosissimus*, but of course not so brilliant; another called *Helen Lindsay*, a rose far excelling *Rose Queen* and *Princess Alexandra* both in size and colour; and there were numerous others not yet let out; *Rebecca*, a charming rosy-lilac of great brilliancy and richness of colour; *Amy Hogg*, a lovely magenta, quite novel in colour; and *Indian Yellow*, a large rich-coloured flower of the colour of the yellow in *Indian shawls*. These are all novelties, perfectly unique, and unlike anything else that has hitherto appeared.

In this way does Mr. Beaton spend his happy hours; and there is but one regret mingled with all this pleasure, and that is that he is debarred from keeping up that weekly intercourse with his friends, which has now lasted for so many years; but he desires us on his part to state that to the many readers of *THE JOURNAL OF HORTICULTURE* who have listened to him so long and so patiently, he desires to be very kindly remembered.

ENCOURAGEMENT TO LOCAL EXHIBITIONS.

DEAL AND WALMER HORTICULTURAL SOCIETY.

In asking you to depart from your usual rule of not inserting notices of provincial exhibitions by giving place to a short notice of this Show held at the end of last month, I do so, not because I am personally connected with it, or because of the superior excellence of the articles produced, or because it was favoured by the presence of our noble Premier and Lady Palmerston, but because there are a few points of encouragement connected with it which might lead others to attempt what we have done, and thus extend the advantages which flower shows do unquestionably confer on floriculture—advantages of which no stronger proof could, I think, be given than the progress our little Society exhibits.

About five years ago it occurred to a few persons, most of them either small tradesmen or gardeners, to attempt a horticultural exhibition. They had great causes of discouragement in their undertaking. In the whole eastern division of the county of Kent there was not a single flower show; while they had on either side of them, at Wingham and Ramsgate, instances of societies which had flourished for a little while and then died out. However, they were not deterred, and, despite of difficulties, they prepared to launch their little boat. Knowing that I was interested in gardening, I was asked to give it a gentle push by delivering a lecture on "The Pleasures and Advantages of Gardening;" but with that exception, and that was not much, the whole work of setting it on foot was theirs. As usual there were some little hitches—a shoal here and a rock there; one with a crotchet of one kind and another with something else. However, they got fairly afloat, and their first show was held; then in the following year another with increasing interest. They then began to be somewhat alarmed at their success—they had created their *Frankenstein*, but they were sadly afraid he would gobble them up. Their expenditure had increased, and they felt that if a wet day came they would be seriously affected by it. They therefore proposed to alter their constitution—to make two Committees, one a financial, to be composed of gentlemen, on whom would rest the responsibility of the money part of the concern, and the other a working Committee. These were after a time merged into one, out of the larger Committee a smaller one for managing the Show, &c., being formed. All have worked amicably together, and the Show has each year increased in interest; and with the good feeling at present existing I have little doubt of its continuance.

It is wonderful how great has been the stimulus given to horticulture in our neighbourhood by means of this little effort. There are now between forty and fifty exhibitors in fruits, flowers, and vegetables. Greenhouses and hothouses have been built in many instances in consequence. Some who had been the flower of another, are now

enthusiastic in their pursuit; and the best varieties of the different flowers are to be seen in many a little garden and window where, formerly nothing but the very commonest things were grown. This success is to be attributable to several causes. In the first place there has been a loyal working together of both the working man and the gentleman. The latter have not assumed that patronising air which too often mars the very best intentions. They have felt, I believe, that as the real working-out of the details rests on the former, they should in their arrangements be considered as in a position of equality. Secondly, We have been contented with offering very small prizes: thus, our highest award is 10s., the lowest 1s. This has not made any very heavy demand on the liberality of our neighbours, while it has been sufficient to induce the best growers in our neighbourhood (not for their own sakes but for their gardeners), to exhibit. Where large prizes are offered it runs into a large sum, and often considerably tends, under unfavourable circumstances of weather, &c., to drag the Society down. If we were to go on and prosper we might possibly increase them, but at present we feel that we are safest by keeping in shallow waters.

The time of year at which we hold our Show is not a favourable one; but then we are obliged to wait for the advent of visitors who frequent our neighbourhood as a watering-place, and also for the time when out-of-door fruits, &c., can be obtained, without which many of our exhibitors would not be able to come forward; and the main object being the encouragement of gardening in its various branches, we are obliged to study in these little matters what may be most to the interest of all.

There are two classes of exhibitors. In the first are comprised nurserymen, market-gardeners, and gentlemen who employ a gardener in whole or in part; in the second those who cultivate their own gardens. This allows for the admission of amateurs and cottagers, who contend in friendly rivalry together.

Our Exhibition this year was much in advance of all its predecessors. Plants were well grown and novelties were exhibited; while in vegetables I think it would have been very difficult in any part of the kingdom to have beaten those brought forward. Our market gardeners are somewhat famous, and the soil is so excellent that they are enabled to produce most creditable specimens of their skill; while the interest manifested in the Show by all classes of the community shows how much good it has done.

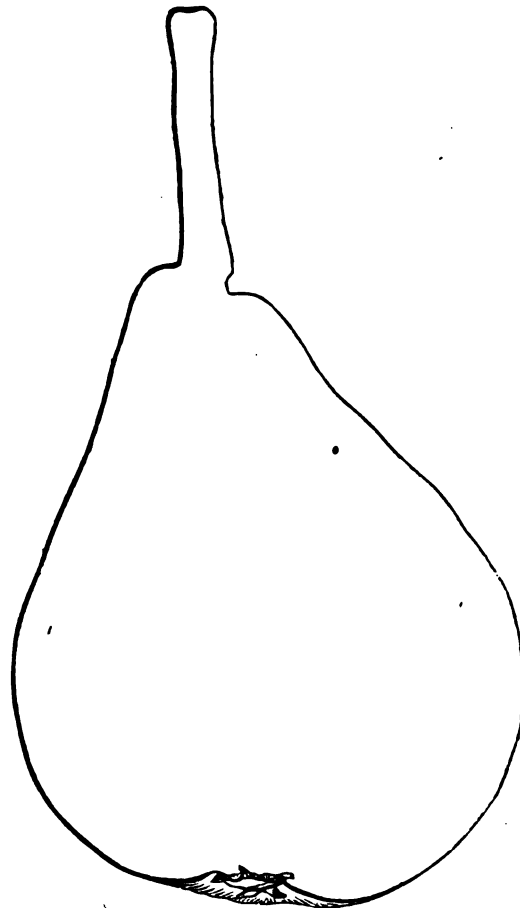
These few facts are brought forward simply to encourage those who are anxious to do anything of a similar character, and who have been deterred by seeming difficulties. As a clergyman I can bear witness to the good effects of such societies in a moral point of view; and anything that tends to improve the taste and refine the minds of our middle classes, as well as to keep the poor man at home, ought to be hailed as a good. We are too much in the habit of considering merely the poor in our arrangements; but I am inclined to think that the small tradesman and persons in a similar class of life ought equally to be the objects of our consideration; and this is one of those agencies which unobtrusively, yet surely, have the effect of drawing away the mind, partially at any rate, from the grosser desires and feelings to those which are more matters of taste and refinement, besides giving an ever-fruitful source of pleasurable enjoyment.—D., *Deal*.

THE STYRIAN PEAR.

We have long known the Styrian Pear, and we have all the time believed it to be one not possessing any particular merit. Our experience, it is true, has been obtained in the southern counties, and there this variety comes far short of what is required in a first-rate Pear. It happens, however, that soil, situation, and climate affect in no ordinary degree some sorts of fruits; and we were not surprised when our excellent and practised correspondent, Mr. Hill, of Keele Hall, so frequently extolled to us the merits of the Styrian Pear. We must confess to have had some misgivings, notwithstanding the opinion of so good an authority, thinking that he spoke by comparison with some of the *Burr* sorts of Pears in that cold Staffordshire climate with

which he so successfully combats. Determined, however, that his own opinion should not be the only argument brought to bear on the subject, Mr. Hill has sent us a box containing a few of these Pears; and we must confess that, for beauty of appearance, there is no Pear we know to surpass them. The annexed figure is a correct representation of one of the small fruits. The colour next the sun is a brilliant vermillion gradually shading off to a bright citron yellow. The cheek is as if varnished. The flesh is yellowish, very fine-grained, tender, buttery, melting, and unusually juicy. The juice is sweet, piquant, and with a beautiful vanilla perfume.

This is a most delicious Pear, and unsurpassed by any other variety of its season, which is the last week of September and the beginning of October.



Had this Pear been grown in the south, where at this season there are so many of first-rate excellence to compete with it in point of flavour, it is a question whether we should have selected it as a variety of unusual excellence; but coming as it does from a part of the country where it is with difficulty that the finer kinds of Pears can be grown, and where Peaches and Nectarines cannot be grown on the open wall, we hail the Styrian Pear as a valuable acquisition to our collections of fruits, for those late and exposed localities. But to enable our readers to judge of this in all its bearings, we extract from Mr. Hill's letter the following valuable observations:—

"I send you specimens of the Styrian Pear from a graft on the Citron des Carmes. You will observe how beautifully coloured it is. We find it one of the best flavoured Pears we have in its season, and by grafting on several different stocks we have it much longer in succession. Grafted on Buchanan's Spring Beurré, it is fully a month later than on the Citron des Carmes. We have also Marie Louise and Althorp Crasanne grafted on the latter. They are always a few weeks earlier, and of excellent flavour."

The Styrian is not so much grown as it deserves to be. It is one of our best Pears for a standard in this part. Strange to say, there is not one gardener in twenty that knows it. I feel curious to know what you think of it, as it is a Pear not generally met with. We have Beurré Rance and Easter Beurré grafted on the Aston Town. These both come in much earlier and are better-flavoured when worked on the Pear stock. They run smaller, and are always better coloured and of better flavour. I have no doubt that many of our Pears would be improved in flavour by being grafted on the early kinds on a south wall. The same remark applies to Grapes. I find the Frankenthal makes the best stock for grafting, and the Barbarossa the worst."

We should in conclusion remark that the largest Pear sent was 9½ inches in circumference round the bulge, and 4½ inches long; and we would advise all fruit-growers north of the Trent who are possessed of a Citron des Carmes Pear, to cut it down and graft it with the Styrian.

RESULTS OF POTATO-CULTURE BY THE BROMBOROUGH POOL WORKS

HORTICULTURAL SOCIETY.

Our little Society has now passed its ninth season with apparently undiminished vigour, and with equal interest on the part of individual members. The table below exhibits its progressive growth year by year. As it is purely a village Society, the members being almost exclusively of the working classes, it may be interesting to show side by side with the number of articles exhibited the value of the prizes distributed:—

	Total Number of Exhibits at the Two Shows.	Total Value of the Prizes Distributed.
		£ s. d.
1855	119	8 18 0
1856	294	9 14 0
1857	290	13 3 0
1858	618	22 14 3
1859	548	19 19 6
1860	453	19 16 0
1861	685	22 9 9
1862	624	22 11 6
1863	559	22 8 6

The dry spring caused a great diminution of exhibitions at our first Show this year.

Owing to our favourable position under Price's Patent Candle Company, the expenses of the Society are undoubtedly less than they would be if we had to pay tradesmen for all services that we could not provide within our own body. But it should be understood that ours is a practical working Society, the Company not supporting it solely by their money, but very judiciously giving yearly a subscription equal to the amount raised by the members themselves.

The Society has been, undoubtedly, a means of much gratification, and of no little good in our village. It was, therefore, with much pleasure that we saw a similar Society commence operations in a village near us (Higher Bebington), under the auspices of the worthy minister, the Rev. G. Troughton, and the leading parishioners; and we hope to hail another Society still nearer to us before another season shall have passed. The Higher Bebington Society has just completed its third season with every prospect of future success and of increasing usefulness.

Feeling as we do that the encouragement of horticulture has done so much for us, it is natural that we should earnestly desire to see similar societies established in every village in the kingdom. It is certain that the gentry of our country parishes have it in their power to effect much good by giving their patronage and a moderate amount of money aid to such societies, and by laying a foundation for operations, where cottage gardens do not exist, by the appropriation of ground for village allotments.

But we believe that the work of such local societies might be made still more useful by a system of communication between them—that is, by the arrangement of prizes to be competed for by the members of several societies. While the Rev. Professor Henslow, of Hitchin, was living we had the advantage of entering the lists annually with his allotment-holders, for "the largest and best produce from surfaces of ground of 36 square feet each, in Potatoes, Onions, and Carrots." We must confess that the experience of his allottees enabled them generally to beat us, but the spirit of emulation and generous rivalry which this yearly contest excited, has done very much to raise our horticultural work and to promote its success.

It was from the results of the examination of pieces of ground entered for such prizes, that the tables published in THE COTTAGE GARDENER, No. 629; and THE JOURNAL OF HORTICULTURE, No. 32, were compiled. We are very anxious to renew for our own Society some such competition; and should the perusal of this article bring us into communication with some other Society like our own, we shall feel that we are indebted in no small degree to the good offices of the Editors.

We ought to premise that the regulations as to the pieces of ground to be entered, in order to render the results as far as possible representative of fair practical cultivation, are as follows:—"For this prize the Potatoes must be dug from the ordinary plots. Potatoes planted in six-foot-square beds will not be admissible. The surface will be measured, in the case of Potatoes planted in rows, by taking such a length of one, two, or more rows as will with the distance from row to row make up 36 square feet. In the case of Potatoes planted in 'butts,' the width of the alley on one side will be added to the width of the 'butt' in calculating the space occupied by the plants."

Our Potato-results were this year most satisfactory, not only as to "total produce," but also as regards the proportion of good tubers, as the following table will show:—

AVERAGE RESULTS CALCULATED FROM ALL THE PIECES TRIED.

Year.	Number of Pieces Examined.	Record lost.	Calculated Total Produce in Tons per Statute Acre.	Per Centage of Good Tubers.
1858	12½	85½
1859	Ditto	10½	83
1860	20	10½	67½
1861	51	11½	74½
1862	36	12½	82½
1863	41	16½	87

The next table exhibits the results of our trials of the various kinds of Potato here, year by year, averages being taken from all the yields of each kind, except only when a solitary sample of any variety was entered. Any such solitary results have been generally omitted, or else have been classed together under the head of "All other kinds."

Kind of Potatoes.	1858.		1859.		1860.		1861.		1862.		1863.		AVERAGE.	
	Total Tons per Acre.	Per Cent. of Good.	Total Tons per Acre.	Per Cent. of Good.	Total Tons per Acre.	Per Cent. of Good.	Total Tons per Acre.	Per Cent. of Good.	Total Tons per Acre.	Per Cent. of Good.	Total Tons per Acre.	Per Cent. of Good.	Total Tons per Acre.	Per Cent. of Good.
York Regent	18	80	12½	88½	12½	41	...	...	...	...	...	...	14.33	70
Lincoln Red	12	87	10	75½	...	...	13	78	...	...	...	...	11.86	80
Kemp (various)	...	...	30	87	9½	40½	11½	79	12½	72	12½	87½	11.95	73½
Pink-eye	8½	98	10½	86	...	...	12½	47	...	...	...	...	10.83	77
Radical	9½	82	11½	82	9	32	...	...	...	...	...	...	10.08	65½
Fuke	11	86½	9	87	9	68½	12½	82	12½	88½	14½	90	11.87	83½
Arrowsmith's Seedling	...	...	7	85	10	76½	11½	86	12½	82½	16	84	11.40	83
Prussian Blue	...	...	...	...	...	...	10½	69½	...	...	...	...	10.35	69½
Scotch Downer	...	...	...	...	...	...	11½	86	14½	86	18½	90	14.83	87½
All other kinds.	...	...	...	...	...	...	...	...	14½	81½	15	83	14.75	82½

In respect, therefore, both of total yield and proportion of good, the "Scotch Downs" has at present the highest place with us. The second place would be closely contested by the "York Regent," "Fluke," and "Arrowsmith's Seedling," the first having slightly the advantage. This kind has, however, ceased to be grown here, owing, probably, in part to its bad yield in 1860, and in part to the high opinion generally entertained of the Fluke in this neighbourhood.

The largest yield this year was from a kind of Potato, new to us, called "Daintree's Seedling." One piece was planted with it and gave a total yield equal to 22 tons per acre, with 90 per cent. of good. This variety bids fair to become a favourite notwithstanding its being rather deep-eyed.

It was noticed this season both here and at Higher Bebington, that very many lots of Potatoes were much "scabbed." When our six-feet pieces were tried there could not have been on an average one diseased tuber per piece. Since that time, however, we have had much rain, and the peculiar odour of the disease is now plainly perceptible in our allotments in the evenings, and many diseased tubers have been found in plots recently dug.

TRANSPLANTING LARGE SHRUBS.

FROM time to time we have heard much upon this subject from different persons, and the results of their experience have varied as much, if not more, than the different localities from which they have written; added to which, soils and subsoils have a material effect upon all transplanting operations. I have met with parties who strongly advocated that there can be no better period of the year for carrying out improvements and alterations about the grounds of any residence than early in the autumn. They base their argument principally upon the fact, that during the summer months the earth becomes heated to a much greater depth than it is in the other months of the year, and assert that moving a certain portion of earth cannot be done without fully exposing it all to the action of the air, even if the time which the operation takes up is but very limited; that in many instances shrubs will, under these conditions, begin to emit fresh roots in the course of ten days or a fortnight after their being removed; and that they will often, after being so removed, start in the following spring quite as fresh and vigorous as those which have not been removed.

This is one side of the question, and I imagine those who advocate this mode of proceeding reside upon gravelly soils or chalky formations, where the drainage is naturally good, and where the soil never becomes saturated with stagnant moisture, which is sure to cause young and tender roots to become ruptured and ultimately rot away.

Strong soils never answer well for transplanting large shrubs or trees, and I consider it by far the best policy in all such to put in quite young plants. They may look very diminutive for a time, but it is far better to bear with this than to endeavour to give effect at once with much larger specimens. I have seen these have all the care and attendance for a season which could be bestowed upon them, by mulching the ground above their roots, and likewise every now and then giving them copious supplies of water; but after all, many of them would soon become little better than sticks, not half clothed with leaves.

After a season or two, notwithstanding every precaution, it would be found necessary to replant with healthy young plants. These may, and often will, for a season or two, almost stand still, not growing more than a few inches. Nevertheless, they will generally retain all their freshness; though a few of them may lose most of their leaves, still they never present that unsightly and skeleton-like appearance which is sometimes seen as the result of planting much larger specimens in strong soils.

From having had to operate in very different soils in various parts of the country, I may safely state that it is very difficult to transplant large specimens in strong soils; but in those which are light and open, especially when the subsoil is of a similar character, I have repeatedly transplanted large shrubs in the middle of summer, and when the weather was a little showery for a week or two they never lost a leaf by the operation. In a soil of this character

I a few years ago assisted at the removal of many Oaks from 30 to 45 feet high, and the operation was generally very successful. The trees were cut round at some distance from the stem eighteen months before removal; all the roots which were put forth where they were cut were carefully preserved, as well as the ball of earth; but no practical man would recommend this being done in strong adhesive soils, however desirable it might be to produce an immediate effect. I consider it safest to use young and healthy plants, and these, in the long run, will give the greatest satisfaction.—G. DAWSON.

FLORA IN THE COTSWOLDS;

OR, WHAT MAY BE DONE AT THE WORKHOUSE.

I HAVE perused with much pleasure, since becoming a reader of your periodical, the descriptions and accounts of various gardens, public and private, which have from time to time appeared in its pages; and having been invited by a friend to view the garden of the workhouse of the town in which he resides, I left this queen of watering-places (Cheltenham) to spend a day or two with him in the quiet town of Northleach, distant thirteen miles, and lying high up in the heart of the Cotswold Hills. Hundreds of your readers would, I think, be encouraged to take heart and persevere in their favourite pursuit, if they could see what I saw there accomplished by taste, energy, and patience devoted to a charming hobby.

Although now a very quiet town, from the railways having driven all the coaches from the road without coming near enough to atone for the change, Northleach was, when wool and not cotton was the great manufacture of this country, a place of considerable importance, as is still testified by its endowed Grammar School, still forward in a career of usefulness, its fine church, with its beautiful porch, and brasses of the wealthy woolstaplers, standing in an attitude of prayer on the wool-bags, with the emblems of the lamb and the shears, to denote the trade of which these departed worthies were not ashamed. Nor is the town quite likely to be forgotten by the agricultural world so long as the Cotswold breed of sheep maintains its character, and young rams of fifteen or sixteen months old sometimes fetch £100 at the annual ram sales, at which open house is kept for all comers; whilst to sporting readers will occur the names of some of the horses sent out of the training stables of Mr. Isaac Day and Mr. Golby.

But it is to as humble a place as the workhouse I am desirous of calling your readers' attention. At the farther end of the town, on the Oxford Road, stands this edifice, the scene of the gardening labours of the worthy master, Mr. Oughton. To compare small things with great, I may say this building is situated somewhat like the National Gallery (but is minus its pillars, porticoes, and pepper-boxes), being raised up from the road, and entered by a flight of steps in the centre. The terrace whence idlers and men with catalogues look down upon the passers-by, forms here the garden, on reaching which I was ready to acknowledge it was worthy of all the encomiums of my friend who had brought me to see it, and who, having just returned from a holiday trip of about two thousand miles, declares he has seen nothing approaching it. For a comparatively small space there is certainly such a display of colour from plants in beautiful condition, arranged with great taste and judgment, as I have never seen surpassed even at Sydenham.

The garden is laid down in grass, and to the right a border runs down each side—one laid out ribbon fashion, with *Cerastium*, *Lobelia*, *Calceolaria*, and *Heliotrope*, and the other with the same and *Geraniums*, planted on the cross; whilst the centre consists of five oval beds, placed alternately lengthwise and across. To the left on entering, the garden is laid down with turf, but instead of the oval beds we have a large central bed 60 feet long and 10 feet wide, edged with *Cerastium*, followed by *Lobelia*, *Calceolaria*, *Geranium Brilliant*, and a central row of *Trentham Rose*. The effect of this bed viewed from the end, where some steps going down to the little chapel admit of a view being gained of the whole length, with the form of its transverse section, is something superb, whilst the old grey wall over which it is thus viewed is resplendent with the blossoms of the

Tropeolum Elopse. The borders in this half of the garden are again planted with Geraniums, Verbenas, Calceolarias, and Heliotropes on the cross. The beauty of the garden is further enhanced by a rustic fountain (home-made), summer-house (ditto), and a neat little greenhouse, 24 feet by 11, chiefly the work of the same industrious pair of hands. Wherever there is a spare space or an unoccupied corner, up goes a rustic bed in stages, or some little device, to be rendered brilliant when the bedding season comes by its appropriate plants. A space around the little chapel, rather lower than the rest of the garden, had *Spergula* planted on it, to form a tiny lawn; but *Spergula* has gone to the rubbish-heap, and "*Requiescat in pace*," says Mr. Oughton, and so say I, and welcome the brilliant flowers in its place. Looking with ever so critical an eye on this display, including the carpentering, glazing, fountain, and gardening, with the little forcing-place and large fruit and kitchen gardens at the back, the visitor must be astonished at what an enthusiastic amateur can, almost unaided, accomplish. And when I say to my brother readers of *THE JOURNAL OF HORTICULTURE*, many of the suggestions from whose pages I here saw admirably carried out, "Go and (try to) do likewise," I must add, for their encouragement, that ten years ago the worthy workhouse-master hardly knew one end of the spade from the other.—J. P. K.

RECOLLECTIONS OF A VISIT TO NORTH RODE HALL,

THE RESIDENCE OF MRS. DAINTRY.

THIS beautiful place lies about four miles from Congleton, five or six from Macclesfield, and is easy of access by the North Staffordshire Railway, as there is a station at North Rode, about one mile from the mansion. Having frequently heard of the high-keeping of the gardens at North Rode, and only residing some half dozen miles from the place, I resolved to make a personal inspection of them. I, therefore, journeyed into the neighbourhood in the early part of the month of May, and can testify that the reports were so far from being ill-founded, that the gardens much exceeded my expectations, and I promised myself another visit further on in the summer. I paid my second visit towards the end of August, and, notwithstanding the previous wet week, I found every part of the grounds in the best possible condition.

I entered the park near to the village church, a beautiful edifice, with everything surrounding it indicating wealth well expended. The park is well studded with trees, many of them young in years, and some few bearing the marks of a venerable old age.

On entering the gardens I met with Mr. Chaplin, the respected head gardener, near to a number of span-roofed houses. The first we entered was the stove. In this house there are some fine specimen plants of *Croton angustifolium*, *Croton variegatum*, *Caladium Belleymei*, *Caladium argyrites*, *Caladium bicolor splendens*, &c. I also noticed some well-grown Ferns down one side of the stove, which was devoted to their growth, and the warm end was set apart for Orchids, all of which were in the highest luxuriance. There were also a few pets of *Anectochilus* growing under bell-glasses, and which were doing well. *Cyanophyllum magnificum* would soon be too large for the house, and *Alcacia metallica* was growing into a beautiful specimen. Some of the flowering plants were going out of bloom, and many others were being grown on to supply the conservatory which adjoins the mansion.

We next entered a low span-roofed house, which was originally built for a pinery, but that idea having been abandoned, it has been converted into a house for the growth of greenhouse plants to supply the conservatory above named. This house is plain in its construction, yet admirably adapted for the purpose to which it is devoted. Of the kinds of plants grown, I may mention *Fuchsias*, *Geraniums*, *Salubritas* and *Zonale* varieties; shrubby and herbaceous *Calceolarias*, *Chorozemas*, *Epacris*, *Boronia*, *Correas*, *Tibbertias*, *Leschenaultias*, *Tremandras*, &c. Near to this house were also cold pits, in which were growing large quantities of *Primula*—and *Cinerarias* of the best named sorts.

ing the second crop of Melons on the same plants that produced the first crop. Judging from the appearance of the second crop which was fast approaching maturity, the first must have been extraordinary. In the Peach-house the fruit was nearly all gathered, but the crop had been excellent.

From the Peach-house we entered the vineries; and here a scene presented itself which I must confess my humble pen is unable to portray: the crops of Grapes, especially the Muscats, were such as any gardener in the kingdom might be proud of. A more regular and even crop I never saw, the rafters were filled from top to bottom, and with as great regularity as if the bunches had been placed on by the hand of an artist. The berries were extremely fine, and well coloured, and the bunches of large dimensions.

In close proximity to the vineries is a large span-roofed house, and, as Mr. Chaplin informed me, he puts it to innumerable purposes. In the centre was a trellis running the whole length of the house from the bottom to the top; to this trellis were trained two large Apricot trees, planted in the open border, and loaded with beautiful fruit. In autumn large quantities of late Cauliflowers and early Broccolis are lifted in the kitchen garden, and brought into this house, which may be termed a winter kitchen garden. The Broccolis are succeeded, I believe, by a crop of Potatoes that come in early, herbs, salads, &c. After the vegetables are over, it is used for Azaleas, Camellias, &c., that have bloomed in the conservatory, as these plants will not do very well out of doors in this neighbourhood.

On leaving this house we walked through the kitchen garden, and here I noticed that the crops of vegetables and the smaller fruits were excellent: in fact, they were as good in proportion as the more choice fruits were under glass. Mr. Chaplin is not one of those who in striving to grow good crops of Grapes, or fine specimen plants yet neglect their kitchen gardens, in which you can scarcely see the vegetables for rank luxuriant weeds. On the contrary, every part of the kitchen garden was scrupulously clean and neat, with scarcely a weed to be seen. The varieties of Strawberries grown were Oscar, Rivers' Eliza, Wonderful, La Constante, Sir Harry, and a few others that escape my memory at the present moment, the latter invariably bearing a heavy crop. I also noticed a number of young Apple trees, of the variety Lord Suffield, trained as espaliers, which were doing well, some of them bearing nice crops of fruit. Mr. Chaplin told me that he considered this Apple invaluable at this season of the year, and more particularly in a season like the present, when the Plum crop may be considered a failure. As soon as the smaller fruits are over this Apple comes into use, and keeps up a supply till nearly Christmas.

From the kitchen garden we passed on to a winding walk by the brink of a beautiful lake leading to the pleasure grounds. On this walk there are many objects of interest to the visitor. The first was a nice boat-house by the water's edge containing three good-sized boats, each capable of conveying large parties on the lake. A little distance beyond the boat-house to the right was the ice-house. On this alone an article might be written. It is simply constructed, and yet effective. I suppose it then contained upwards of fifty tons of ice. A little further on was the hardy fernery and rockery, where the water was trickling down the stones, and where a lover of these beautiful plants would wish to linger.

Leaving this lovely dell we came on to a raised terrace walk, where the undulating scenery is stretched before the eye like a charming panorama. Far away in the western horizon might be seen the lofty heads of the shire hills; in the north a hazy glimpse of the Derbyshire hills might be seen in the neighbourhood of Buxton, while to the right in an easterly direction might be seen a hill called The Cloud—so called, I should imagine, from its immense altitude—and which I suppose is the highest hill in the county.

From this walk we entered the flower garden, and here a blaze of beauty meets the eye of the spectator, every bed was full to overflowing. Mr. Chaplin has a happy method of blending colours, and I do not remember two beds being planted alike.

Mr. Chaplin had tried the *Coleus Verschaffeltii* as a bedding plant but it would not answer, and it had been succeeded by the *Impatiens melancholica*—and that

was scarcely giving satisfaction, it being too dingy in its appearance. I noticed a bed edged with *Geranium Mrs. Pollock*; and it may be satisfactory to know that this charming variety retains its robustness of habit and its beautiful and delicate hues even in this northern district. I also noticed another bed edged with *Centaurea candidissima*, which looked well, and another edged with *Tussilago farfara fol. variegatis*; but the lion of the flower garden was *Tropæolum Eclipse*. Mr. Chaplin intends, as soon as the summer-bedding plants are over, to fill the beds with early-flowering bulbs and spring-flowering plants. In the reserve garden for this purpose I noticed large quantities of English and German Wallflowers, *Arabis alpina*, *Arabis alpina variegata*, *Forget-me-not*, &c. On the neatly-kept lawn adjoining the flower garden was a fine specimen of the noble *Wellingtonia gigantea*, its height was 15 feet 6 inches, and the circumference 30 feet.

The last, but not the least, place we entered was the conservatory, and here another sumptuous treat was in store. all the plants were well grown and in good health. I could neither see a plant deficient in vigour nor an obnoxious insect. I may say in conclusion, that Mr. Chaplin was extremely kind and obliging, and spared no pains to point out every object of interest.—QUINTIN READ, *Biddulph*.

THE GARDENERS' BENEFIT SOCIETY.

THE Gardeners' Society is fast becoming the topic of the day amongst us. Even in this locality, remote as it is, there are some who are willing to become supporters of it with all its rules, and wish for its being speedily in operation. There are others who say that it will never be accomplished, because in many of our good places there are men acting as head gardeners who never served a regular apprenticeship, and who cannot stand before some of the Society's rules: consequently their support is lost to the Society, which accounts in a measure for the supineness shown by gardeners in not coming forward to promote the proposed Society, so much needed. A third party will say, "Bah! are we going to be wheedled out of our hard earnings to swell the corporation of our beef-eating neighbours, or to line the pockets of our canny N.B.'s by having them placed over us in this Society?"

This is the substance of several gardeners' discourses, which, to my knowledge, have taken place in this neighbourhood. They invariably have come to the conclusion that if fair play is given in this respect by placing Irishmen in office in the Irish branch of the Society they will cordially give their support to it.—B. CARROLL, *Gardener to J. S. Kirwan, Esq.*

SOME OF THE GARDENS WORTH SEEING.

BEDFORDSHIRE.

Name.	Proprietor.	Gardener.	Town.
Woburn Abbey	Duke of Bedford	Unknown	Woburn
West Park	Lord Cowper	Mr. Snow	Silsoe
Stockwood Park	J. Crawley, Esq.	Unknown	Luton

ESSEX.

Boston Lodge	Viscount Maynard	Mr. Moffat	Dunmow
Thorndon Hall	Lord Petre	Mr. Crawford	Brentwood
Cranbrooke Park	J. Davies, Esq.	Mr. Beckell	Ilford

HERTFORDSHIRE.

Kimpton Hoo	Lord Deere	Mr. Cox	Hitchin
Hyde	Lionel Ames, Esq.	Mr. Terry	St. Albans
High Leigh	W. Jay, Esq.	Mr. Beesley	Hoddesdon

SUFFOLK.

Hardwick	Lady Cullum	Mr. Fish	Bury St. Edmunds
Iskworth Park	Marquis of Bristol	Unknown	Bury St. Edmunds
Rendlesham Hall	Lord Rendlesham	Mr. Allan	Woodbridge

THE VITAL POWER OF THE WHEAT PLANT.—At the Lewes Flower Show in August was shown a bundle of corn containing 1551 ears, the produce of a single grain sown in June, 1863, by Mr. Spary, of Chailey. The object was accomplished by what is termed "propagation," or division and redivision of the root. The plant raised from the single grain was divided three times, and replanted. In a month or so these plants were redivided and again planted, and in the following spring a third division of all the plants was made. The result is a good armful of corn, containing 1551 ears; and

as each ear may contain from twenty to eighty grains, the yield of a single grain so treated becomes something incredible.—(*Brighton Guardian*.)

[In connection with this we may remark that Mr. Spary has sent us four specimens of Wheat fairly ranking among the finest we have ever examined. Of these Spary's Prolific takes the lead as a Red Wheat, quite equal to the lead taken by Hallett's Pedigree among White Wheats.]

NEW BOOK.

A Handbook of Vine and Fruit-Tree Cultivation, as Adapted to Sir Joseph Paxton's Patent Hothouses. By SAMUEL HEREMAN. London: Bradbury & Evans.

THIS is a pamphlet of a little over fifty pages, the main feature of which is a treatise on the patent hothouses introduced by Sir Joseph Paxton, and furnishing instructions for their management and the cultivation of the crops they may be employed in growing. The book is illustrated with some excellent woodcuts, representing residences in connection with which these hothouses have been erected; and we must own, that if the buildings produce effects as elegant as they do in the engravings, and we see no reasons why they should not, we should advise our readers who have not seen them to make inquiry about these new houses. The instructions given for the cultivation of the Vine and other crops are essentially practical, and are evidently written by one who has himself performed all the operations before he attempted to instruct others.

TODMORDEN BOTANICAL SOCIETY.

A MEETING of this Society was held on September 7th, at which Dr. Rigby, of Chorley, Lancashire, was elected a member, and Dr. O'Brien, of Ennis, Co. Clare, Ireland, an honorary member.

Among specimens of flowering plants lying on the table were the lovely *Eucharis amazonica*, *Rondeletia speciosa* major, *Meyenia erecta*, a species of *Cypripedium*, *Lilium lancifolium rubrum* (fine), several good varieties of *Petunia*, *Caladium*, *Maranta*, &c., *Aster tripolium*, *Chrysanthemum arcticum*, and *Potentilla dubia*. Among Cryptogams were the beautiful new crested variety of the Royal Fern, *Osmunda regalis cristata*, *Platyloma Brownii*, *Pteris tricolor*, *P. argyræa*, and *P. cretica albo-lineata* (three of the handsomest variegated Ferns), *Asplenium trichomanes incisum*, and a new and most beautiful variety of the same species, provisionally named *serratum*. It is a much-improved subæquale. Both varieties form part of the botanical "spoils" resulting from the Society's recent Irish excursion, and are, we believe, the special pickings of Messrs. Nowell and Stansfield.

Mr. A. Stansfield, jun., brought fine examples of the Holly Fern, called often the "Scotch Fern," from its being almost peculiar to the Scottish mountains, lately gathered on Craiggalleach, one of the heights of the great Breadalbane chain; also fronds of a quite peculiar form of *Asplenium viride*, gathered in the same locality; together with a beautiful variety of *Athyrium Filix-femina*, with the pinnae uniformly and most elegantly tasselled, from the neighbourhood of Aberfeldy.

After the transaction of business, conversation turned on the late excursions. Of these there have been three since the last meeting of the Society—the first on the 14th ult., to the highlands of Scotland, the party comprising Mr. J. Fielden (York), and Mr. A. Stansfield, jun.; the second, on the 22nd ult., to County Clare, Ireland, the party comprising Mr. Stansfield, the President, Mr. Nowell, the Vice-President, and Mr. Patman, the annalist of the Society, T. Aitken, Esq., of Bacup, and Mr. Greaves, of Hebden Bridge; the third was a minor excursion.

The highland explorers had the disadvantage of bad weather. They managed, however, spite of almost incessant rain and storm, to rob the "old hills" of not a few of their botanical secrets. Pity that one cannot find a means of propitiating the meteorological powers before starting on a botanical tour!—above all, a botanical tour in the highlands, where the clouds, attracted by the giant hills, distil almost constant floods. Not that any true botanist need to, or

indeed does, take to his heels at the sight of a hand-big cloud—what are cloud and storm to him, seated in the crevice of a rock, mentally engrossed with some beautiful and rare mountain flower? Nothing!—only there is the small matter of the body, which is frail. Walking ankle-deep in wet bog, or scrambling over slippery rocks, one slip from which would bring you to “where adieus and farewells are a sound unknown,” may be pleasant for ten hours running, but for ten days—hardly.

Our neophytes did not return from the Scottish alps without bringing with them that loveliest of all purely alpine British plants, and which is as rare as it is lovely, occurring only in one locality in Britain, the Breadalbane mountains, the *Myosotis alpestris*. It is described as growing in greatest abundance on almost inaccessible cliffs from 300 to 400 feet in perpendicular height on the western side of Ben Lawers, and here it was that our young botanists gathered it, though under circumstances of extreme difficulty and peril, the natural difficulties being heightened by the inclement weather. Ben Lawers yielded them also the rare *Cerastium latifolium*, *C. alpinum*, *Saxifraga nivalis*, *S. stellaris*, *S. hypnoides*, *S. oppositifolia*, *S. aizoides*, *Arenaria rubella*, *Salix reticulata*, *S. herbacea*, *Gnaphalium hyperboreum*, *Thalictrum alpinum*, *Arbutus Uva-ursi*, *Sedum anglicum*, *S. telephium*, *Sibbaldia procumbens*, *Helianthemum canum*, *Campanula rotundifolia flore albo*, *Epilobium alpinum*, *E. alsinifolium*, *Polystichum lonchitis*, *Polypodium alpestre*, *Lastrea alpina*, *L. cristata spinulosa*, *Cystopteris fragilis furcata*, *Asplenium adiantum-nigrum angustatum*, *A. adiantum-nigrum variegatum*, *Lycopodium selago* (nearly a foot high), *L. selaginoides*, *L. alpinum*, and a host of others.

The Irish excursionists, with not more enthusiasm animating them than the Scotch, were more favoured in the important matter of weather. As a consequence, they returned from Erin with vasculums filled to overflowing—overflowing, too, with botanical treasures of the rarest kind, such as would repay the young enthusiast a journey round the globe. Among the discoveries of the party were not wanting, as we before intimated, plants of that exquisite and rare British Fern, *Asplenium trichomanes incisum*, the fortunate finders being the President and Vice-President. We can imagine the loud and jubilant shouts that arose on these occasions.

Our excursionists trod over acres of the rare *Dryas octopetala*, beautifully in bloom; found in quantity the rare *Gentiana verna* (than which, what British plant, occurring at a moderate elevation, is more beautiful?); saw the exquisite Maidenhair Fern in all its glory and pride, its ineffably delicate fronds being measured by the foot; saw the crenate Scale Fern 1 to 1½ not inch, but foot; the beautiful Marine Spleenwort well nigh 3 feet, &c.

Among plants found in plenty, in addition to the above, we may mention *Potentilla fruticosa*, whose myriad golden-yellow blossoms coloured the landscape, *Arbutus Uva-ursi*, *Rubia peregrina*, and *Asperula cynanchica*. Rarer phenomena, too, were found, such as *Trifolium medium album*, *Saxifraga decipiens*, *Prunella vulgaris alba*, *Cochlearia anglica*, *Neottia autumnalis*, *Epipactis rubra*, and *Euonymus europæus foliis variegatis*. In regard to cryptogams, “no end of good things” were the rich reward of the searchers. We enumerate a few: *Polypodium vulgare semilacerum*, *Lastrea Filix-mas stenophylla*, *Polystichum aculeatum* new and beautiful crested variety not yet named, *Lastrea smula* in quantity, *Scolopendrium v. Malcomsoni*, *S. v. fissile* (?) *S. v. sagittato-projectum*, *S. v. Martiniana* (new), with a score of other varieties of *Scolopendrium*, scalpturate, multifid, crenate, sublineate, supralineate, muricate, lobate and undulate, too numerous to give in detail: they comprise many wholly new to the British pteridologist. Mr. Nowell, also, had fully average success in his *specialité*, bringing away with him large numbers of rare Musci and Hepaticæ.

The Irish excursion was not wanting, either, in amusing accident and adventure, as the Vice-president's account of it, given in his usual naïve manner, attested. In the wilds of Iare, be it known, every botanist is taken for—a doctor's treat is the gathering of the ailing of both sexes in the appearance of a... ..

These very names... ..

Hamburg Grapes have ripened in them as far north as Manchester. An amateur at Stretford, near Manchester, has within the last fortnight cut from two canes only, each 7 feet long, fifteen bunches of well-ripened Black Hamburgs weighing about three-quarters of a pound each.—Vitis.

LAPAGERIA ROSEA OUT OF DOORS.

ABOUT three years ago a friend kindly presented me with a very strong and fine plant of *Lapageria rosea*, because, as he said, he had not heat enough to grow it well. I treated it to plenty of heat, and it very shortly died, probably from very bad management on my part. Not liking to be beaten I purchased another plant of Messrs. Veitch in the spring of 1862. It was very small, and I placed it in a warm greenhouse till about the middle of June, when I stood it out of doors in a sheltered position all through that summer, during which time it made two long and strong shoots from the base. About this time last year it was put back in the same greenhouse; and this year, in June, it was again set out. About a fortnight since I found several bloom-buds on it, and one just expanding, and I can now show what few have seen—viz., a plant of *Lapageria rosea* in bloom out of doors.

I trouble you with this to convince those who, like myself, may not have all the conveniences they might wish for to enable them to follow their favourite pursuit, that it is possible to have this beautiful plant in perfection when very small, and with no more trouble than is requisite to grow an Azalea or a Camellia.—AN AMATEUR, Guildford.

SMALL BIRDS.

We extract the following interesting letter from the *Times*.

“In a retired corner of the French department of the International Exhibition there lay a long row of mysterious and rather dingy specimens, which in spite of their unattractive appearance, well deserved a study, even in the midst of the bright and beautiful objects by which they were surrounded.

“They consisted of a very numerous collection of the stomachs of birds with their contents spread out on sheets of paper, with a written description of their contents, the time of the year in which the bird was taken, and other particulars. They were the work of M. Florent-Prevost, the celebrated French naturalist, who for thirty years has been prosecuting his inquiries of this kind, and endeavouring to convince his countrymen of the suicidal folly of which they are guilty in the persistent and indiscriminate slaughter of these beautiful little creatures.

“In taking steps to impress particularly upon our younger people in Australia the mistake they commit in destroying these birds which we are taking such trouble to introduce among them, I have put myself in communication with this kind-hearted and enlightened philosopher, and by his aid I have prepared a tolerably complete list of what is eaten during each month of the year by the more common of our birds. And I think, that this list is worth study at home; when the destruction of small birds by poison and other means is attracting Parliamentary notice, and the undeniable facts are brought before the public of whole tracts of forest land laid waste, and whole countries reduced to famine, by the thoughtless removal of the only effective check upon the ravages of the insect tribe, we really ought to dwell upon that point. The little bird is our only safeguard against a pest, which but for it would soon become overwhelming. As Michelet very well says,—‘The bird can live without the man, but the man cannot live without the bird.’ Were we all to resolve ourselves into one great sparrow club we should all in a few years perish from famine.

“I trust, then, that this list will be found useful; and I would suggest to parents, and teachers particularly, that it might advantageously be cut out and preserved for future use, that the minds of young people might be properly impressed with ideas of the usefulness as well as beauty of the pretty little things that enliven our hedgerows and hop across our paths.

“*Long-eared Owl*.—January, February, and March, mice. April, cockchafer. May, rats, squirrels, and cockchafer. June, mealworms, beetles, and shrew mice. July, mice, ground and other beetles. August, shrew and other mice. September, October, and November, mice.

“*Short-eared Owl*.—January, mice. February, harvest mice. March, mice. April, crickets and harvest mice. May, shrew mice, and cockchafer. June, beetles. July, field mice and

birds. August, field and shrew mice. September and October, field mice and beetles. November, common and field mice. December, mice, spiders, and woodlice.

"Barn Owl.—January and February, mice. March, April, May, and June, field mice. July and August, mice. September and October, field and shrew mice. November, mice and the black rat. December, mice.

"Rook.—January, field mice and larvae or grub of cockchafer. February, field mice, grub of cockchafer, and red worm. March, grubs and chrysalids. April, slugs, worms, and chrysalids. May, beetles, grubs, prawns, and wireworms. June, cockchafers, eggs of birds, and wood-boring beetles. July, young birds, beetles, &c. August, birds, field mice, weevils, crickets, and grasshoppers. September, grubs and worms. October, grasshoppers, ground beetles, and young animals. November, young rabbits and different insects and grubs. December, different animals and decaying substances.

"Magpie.—January, grub of cockchafers, young beetles, and corn and seeds. February, the same and berries. March, the same. April, crickets, water rats, and mice. May, cockchafers, glow-worms, and fruits. June, the same and weevils. July, beetles and field mice. August, birds' eggs and weevils. September, beetles, worms, barley, and grasshoppers. October, grasshoppers, carrion beetles, and green locust. November, grasshoppers, and kernels of fruits. December, grubs of cockchafers, young rabbits, and berries.

"Jay.—January, grubs of cockchafers, acorns and berries. February, chrysalids, and different grains and seeds. March, grubs, insects, wheat, and barley. April, grub of beetles, and snails. May, cockchafers and locusts. June, eggs of birds, cockchafers, and beetles. July, young birds, flies, and beetles. August, the same, acorns, grubs and dragon-flies. September, the same and fruits. October and November, beetles, slugs, snails, and grain. December, the same, haws, hips, &c.

"Starling.—January, worms, grubs of cockchafers, and the dung of animals. February, grubs, snails, and slugs. March, and April, grubs of cockchafers, and snails. May, the same, and grasshoppers and fruits. June, flies, and grubs of various flies and fruits. July, grubs, freshwater shell fish, and fruits. August, flies, glow-worms, and various beetles, and fruit. September, green locusts, grubs of carrion, beetles, and worms. October, worms and beetles. November, snails, slugs, and grubs. December, hips, haws, and buds of trees.

"Golden Oriole.—January, various chrysalids. February, chrysalids and worms. March, grubs and beetles. April, ground beetles and weevils. May, beetles, moths, butterflies, and grubs. June, grubs, grasshoppers, bees, and cherries. July, cherries and beetles. August, weevils, chrysalids, fruit, and worms. September, beetles, grubs, worms, and fruit. October, grubs, herbs, chrysalids, berries, and barley. November, ants and worms.

"Crested Hoopoe.—January, worms, grubs, and snails. February, March, and April, the same and birds. May, flies, dragon-flies, and grubs of May-flies. June, water and land snails, flies, &c. July, August, September, the same and woodlice. October and November, snails, flies, and spiders. December, the same and worms.

"Green Woodpecker.—January, ants. February, worms and grubs of ants. March, slugs, beetles, and grubs of ants. April, ants and worms. May, red ants and grubs of wasps. June, bees and ants. July, red ants. August, red ants and worms. September, ants and worms. October, grub of ants. November, grub of ants and bees. December, ants.

"Reed Thrush.—March, grubs and insects. April, aquatic grubs. May, grubs of house and dragon flies. June, worms, grubs, flies, and May-flies. July, beetles and dragon-flies. August, worms, eggs of insects, and beetles. September, aquatic insects.

"Great Titmouse.—January, beetles and eggs of insects. February, grubs. March, winter snails, beetles, and grubs. April, cockchafers, beetles, and bees. June, cockchafers, flies, and other insects. July, the same. August, insects and fruits. September, seeds, grasshoppers, and crickets. October, berries. November, seeds.

"Blackbird.—January and February, seed, spiders, and chrysalids. March, worms, grubs, and buds of trees. April, insects, worms, and grubs. May, the same and cockchafers. June, the same and fruit. July, August, and September, all sorts of worms and fruit. October, grubs of butterflies and worms. November and December, seeds and chrysalids.

"Sparrow-lark.—January, seeds of wild plants. February, seeds and corn. March, various insects, worms, seeds, and corn. April, insects, beetles, and corn. May, flies and various insects.

June, grasshoppers, worms, and corn. July, crickets and grasshoppers. August, insects, corn, and seeds of weeds. September, seeds, worms, and barley. October, November, seeds, corn, and berries. December, seeds of wild plants.

"Redbreast.—January, insects, worms, and chrysalids. February, insects, worms, and woodlice. March, chrysalids and worms. April, moths, eggs of insects, and cockchafers. May, grubs and beetles. June, flies, moths, spiders, and worms. July, moths, butterflies and woodlice. August and September, the same and worms. October, eggs of insects and aquatic insects. November, worms and chrysalids. December, chrysalids, grubs, and eggs of moths.

"Nightingale.—February, grubs and worms. March, the same, and chrysalids and ground beetles. April, flies, meal-worms, beetles, and red worms. May, butterflies, cockchafers, weevils, and grubs. June, spiders, wood-boring beetles, and worms. July, worms, grubs, eggs of locusts, grasshoppers, moths, and flies. August, locusts, glow-worms, weevils, and grubs. September, locusts, beetles, worms, and dragon-flies. October, grubs, worms, and beetles. November, flies and worms.

"Linnet.—January, February, March, and April, seeds and berries. May, June, July, August, and September, the same and insects. October, November, and December, berries, seeds, buds of trees, and fruit.

"Chaffinch.—January, seeds, berries, and kernels of fruit. February, the same and corn. March, the same and insects. April, moths, flies, and insects of various kinds. May, cockchafers, grubs, and eggs of insects. June, the same and wild fruit. July, the same and grubs of beetles. August, moths and butterflies. September, eggs of insects, worms and seeds. October, wood-boring beetles and insects. November, seeds. December, seeds and buds.

"Greenfinch.—January, February, and March, seeds, berries, wild fruit, worms, &c. April, May, June, July, and August, the same and insects. September, October, November, and December, seeds, berries, worms, and wild fruit.

"The Sparrow only lives near the habitations of man. It varies its food according to circumstances. In a wood it lives on insects and seeds; in a village it feeds on seeds, grain, and larvae of butterflies, &c.; in a city it lives on all kinds of *débris*. But it prefers cockchafers and some other insects to all other food.

"In looking over this list critically our sparrow-killers will probably think that M. Florent-Prevost has here and there allowed the advocate rather to interfere with the philosopher, and they may miss some articles of food which it is notorious that birds consume; and in his zeal to show the amazing quantity of insects destroyed by his little *protégés* the proportion of fruit, grains, &c., also consumed perhaps scarcely accords with our less accurate observation. Still these results are obtained by actual inspection, and we may be sure that everything enumerated has been found. And we must remember that these experiments were made in France, and that the food of birds will always be largely influenced by local peculiarities.

"It is worth mentioning that a study of M. Florent-Prevost's specimens showed another important fact ranging beyond the above lists—that many birds, namely, living a good deal upon grain, feed their young entirely on insects, so that they are serving us admirably in this way at a season when insects are most rife, even when the examination of their own stomachs would lead us to denounce them as little better than mere plunderers.

"And here I would draw attention to the value of another set of experiments recently reported in the papers, as suggestive of the incredible quantity of insects destroyed by such agencies. A gentleman took some young Robins and fed them himself, weighing them and their food accurately day by day, to discover what quantity a young bird required to keep it in a growing and healthy condition. As he went on he became more and more astounded at the results; and he found that, taking the common earthworm as a representative of the food, the daily supply required to keep a young Robin in its highest health, laid end to end would reach the almost incredible length of 14 feet. This seems amazing, but those will not hesitate to believe it who have watched the incessant activity during the long hours of a summer's day of a pair of birds with a nest of young. But let us put this and that together when we wish properly to estimate the services of this invaluable little thief-catcher, and with a true conception of the part he has to play among us, let us do what we can to save him from the wanton shot and cowardly poison.

"I am, Sir, your obedient servant,

"Reform Club.

"EDWARD WILSON."

KEELE HALL.

(Continued from page 237.)

THE centre-house or conservatory is 50 feet long, 25 feet wide, and 15½ feet in height, deeper ridge-and-furrow roof, and glass all round except against the back wall. The house was well stored with fine plants of Camellias, Azaleas, Oranges, &c., and the roof was rich with streamers of Passion-Flowers, Tacsonias, and Bignonias, so as to give to the whole great ease and naturalness of expression. The entrance front of the conservatory was guarded by two very large variegated American Aloes in dark tubs; and just behind them on two pedestals to the steps, stood two *Humea elegans*, one on each side. These were in pots and were, therefore, so far out of character, for nothing less than an elegant vase ought to have stood in such a position. A walk from this front leads to the park and its nice timber. Looking back at the conservatory (*fig. 1*), the two Agaves, the feathery *Humeas* behind them, and the flaunting streamers and other vegetation inside, made it a pleasing picture.

The vineries and the conservatory in this range were slightly shaded during the summer by what Mr. Hill prefers

to all other modes—as much patent driers is mixed with linseed oil as to give the necessary shade, trying several pieces of glass until satisfied. It stops on all the summer. A little potash and soft soap in water will take it off; but care must be taken not to touch the paint, or that will be taken off likewise.

As a lean-to at the back of this conservatory range is the general show-house for flowers. It is 100 feet long, 11½ wide, 11½ high at back, and 8 high in front. The back air is given through a chamber in the wall, and passes out through the south side above the glass as already described. The stages are formed of slate, supported by columns as elegant as they are economical, being earthenware socket-pipes 1 foot in diameter, the socket forming the base of the column. This house was very gay with Fuchsias, Lilies, Geraniums, &c., and we can fancy its appearance in winter with Camellias, bulbs, &c.; and in spring when the fine collection of Azaleas is in bloom. Opposite the east end of this house is a walk with a ribbon-border on each side lead-

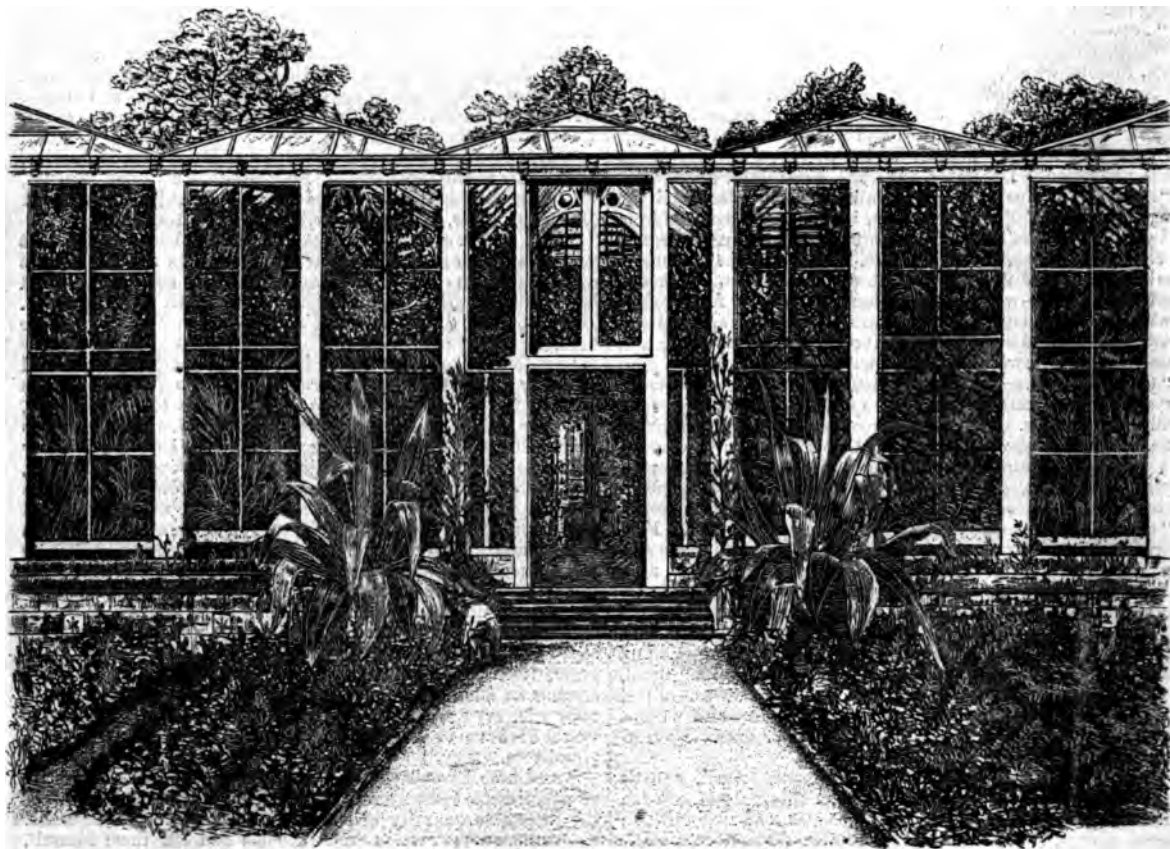


Fig. 1.

ing up to a fine Peach-wall, which here forms the northern boundary of the garden, over which some fine Chestnuts and some beautiful Scotch Firs break the sky outline.

Proceeding still onwards in the same direction, we come to the orchard and nursery garden, being at present a regular repository for fruit, shrubs, Roses, and flowers of all kinds; but which by the removal of the nursery part is to be devoted chiefly to fruit, Roses, and beds of flowers mostly or cutting from, with massive beds of such useful under-shrubs as Lavender, &c., of which large quantities are sent out. The quantity of Cloves and Carnations, &c., here

things, and all for cut flowers. This garden is divided near the centre by a grass walk 8 feet wide and 200 yards long, with a ribbon-border on each side, and planted the same, beginning at the grass with Scarlet Geranium, then Caie's yellow Calceolaria, which does well here, and brought all the associations of our old friend Mr. Caie and the grouping in the flower garden at Bedford Lodge, Camden Hill, vividly before us. We think this Calceolaria is named Kayi, but that is a different thing, and was sent out by the late Mr. Kay, of Finchley. The Calceolaria is backed by the Purple Zelinda Dahlia, and the by Gladiolus, backed again by a road row of Hollyhocks. The Gladioli were not then in

bloom, which rather made a blank. This pleasant walk is again crossed by a noble avenue of beautiful Deodars, each plant being as like and as massive as its neighbours, looking almost as if a mould had been made to fashion them. These were planted twenty years ago, and were raised and replanted in their present regular position twelve years ago. They now stand from bole to bole across the avenue 33 feet apart, and from bole to bole in line 25 feet apart. Not one was injured at Keele in 1861, though hundreds were destroyed in the more sheltered valleys, as at Trentham and other places.

As already noted, the frosts of May had rendered the fruit more scarce than usual; but the appearance of the standard and goblet-trained Apple trees, the pyramidal Pear trees, &c., denoted that in a fine season there would be no lack of fruit. Though we only passed a few hours at Keele Hall, we could have spent a day cheerfully in this general repository alone, there was such a thorough blending of the useful with the beautiful. For instance: In one place in front of these trained trees were fine collections of Roses, half standard and dwarf, grown in beds 4 feet wide, and

surrounded with *Cotoneaster microphylla* edgings, out 6 inches high and 6 inches across; and then in another place were numbers of beds surrounded with Box similarly managed, and containing collections of herbaceous, and the best bedding plants. In one place, we think here, was a fine piece of *Calceolaria canariensis*, dwarfer in habit and a more soft yellow than *Aurea floribunda*. The west side of this garden is bounded by a fine Holly hedge, and a broad grass avenue separates it from a row of Limes which are to be cut and trained to a definite form. At the north-west corner is a beautiful gate, and a broad gravel walk goes from it along the north side of this garden, backed by perhaps the finest Holly hedge in England. This gate was glazed with strong glass, the first gate I had ever seen so treated. I have omitted to state that from the entrance to the stables a fine view is obtained of the conical-headed Wrekin mountain. From this gate a fine panorama of landscape opens up, terminating with the Welsh mountains; but the currents of wind were frequently so strong that the pleasure of walking was here greatly diminished, and hence, to keep the wind out, and enjoy the views too, the gate

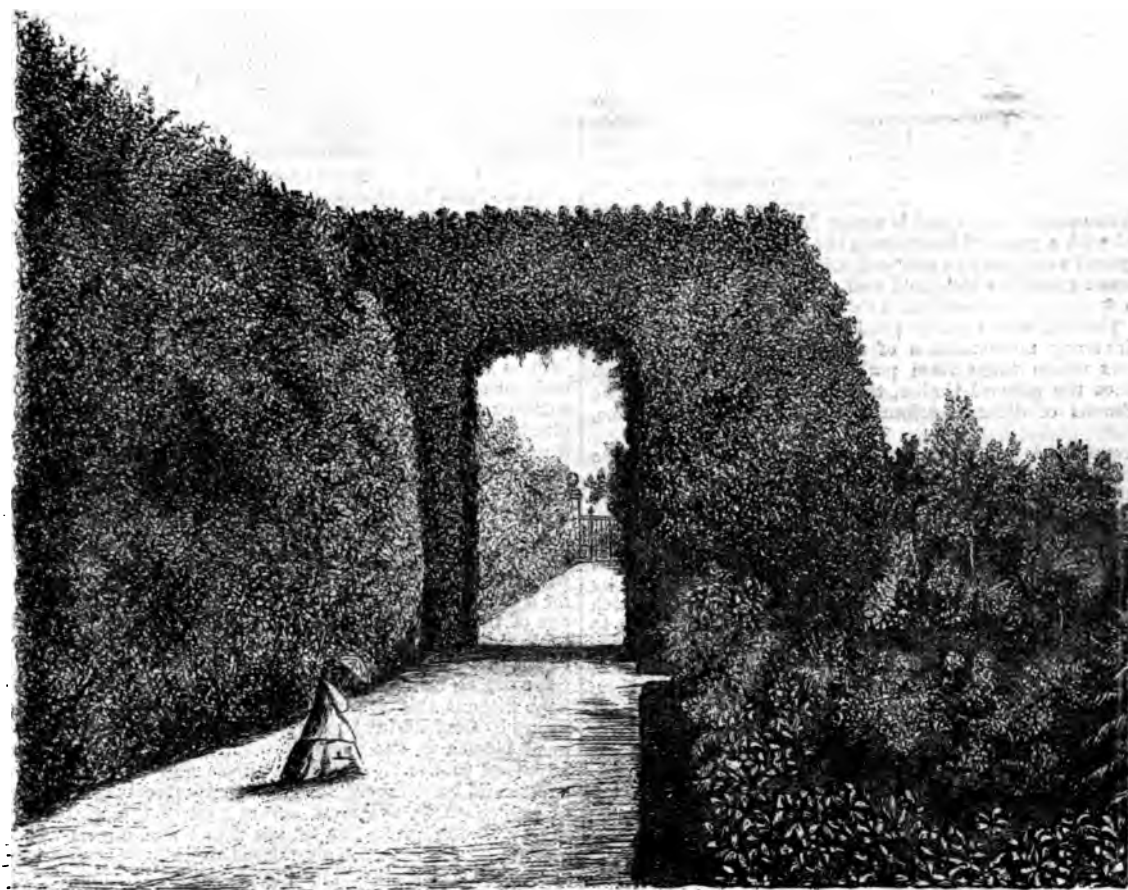


Fig. 2.

has been glazed. This fine hedge (fig. 2) is 200 yards long, 24 feet in height, slopes back out of the perpendicular to the top fully 6 feet, is about 6 feet wide at the top, and we presume is about 20 feet wide at the bottom. After passing the eastern boundary an evergreen arch across the walk from the hedge forms a very pleasing view.

Returning eastward still, we come to the bowling-green flower garden, bounded on the west side with a good Yew hedge, and on most other sides with huge masses of noble plants of the crimson and scarlet Rhododendrons, which here escaped the frost of 1861, though destroyed in many lower places. In this garden the beds are in a panel below the walks; and though all were full and good, the magenta

Verbena alluded to already and the *Gazania splendens* and Golden Chain Geranium were much above the average. From this garden we wind through masses of Rhododendrons, Hollies, and other evergreens until we reach a broad terrace walk above the level of the first kitchen garden wall, and from which the whole can be seen at a glance; but if we wish for something more retiring, we have only to step backwards a little to reach the centre of a fine avenue of flourishing Spanish Chestnuts, though not come to their best, the avenue being 400 yards long, and many of the trees girthing from 13 to 14 feet at 2 feet from the ground. Passing onwards through a rockwork and fernery on a lower level, we reach the mansion; and if a shade of regret has

come over us, it is that the fine Deodars, noble Chestnuts, ancient-looking Scotch Firs (girdling from 9 to 11 feet), and Sycamores (girdling 14 feet), do not come in as prominent objects from the principal windows.

Here we had the privilege of meeting the worthy proprietor and being shown by him over the principal rooms of the fine new mansion, most of which are yet not quite furnished. The ceiling of the drawing-room is gorgeous in the extreme, and the wood-carving throughout must be second to few or none. We were almost sorry to find that some of the most elaborate gilding in the rooms was placed over the most beautiful carving in wood, thus almost putting the latter at first sight in competition with gilding over plaster, &c. The gilding seems to hide at first sight not only the rare taste of the artist, but the liberality of the proprietor in securing it. There did not seem to be anything of a make-believe, but everything to be real in the elegant adorning of these fine suites of rooms. Mr. Sneyd told us that at his advanced age he had no idea of building a fresh mansion on the site of the old one, but merely wished to renew a part, but that when that was about to be done the architect surprised him by stating what he deemed then to be an impossible fact—that the foundations of the old house were giving way, though it was based on the sandstone rock. It was, however, true. The rock in places had been thin, with a bed of sand beneath, and there the weight of the house had cracked the rock and caused it to subside. The whole mansion is a beautiful piece of workmanship, built chiefly with a hard pink sandstone found on the estate, relieved with the white Hollington stone found near Alton Towers, and the joints are so fine as to be just discernible.

At the south front there is a nice flower garden in a sunk panel with a graceful fountain in the centre. The beds in the panel were massive and well filled, and surrounded with coloured gravels, which told well. A series of composition-beds were placed on each side on the higher level, and what was planted was equally good; but we were prejudiced against any mere masses of coloured gravels instead of flowers where these form part of the same composition. Besides the general timber, this garden is backed by fine specimens of different-coloured Hollies, Hemlock Spruce, &c.

From the terraces and lawn on the south-east side fine views are obtained of the woods of Trentham and Henschurch. On the bold swelling ground to the eastward the belts formed by Brown have been broken up and now are graced with masses of timber. In the bottom vale beneath you a nice lake has been formed out of several disconnected fish-ponds, and the fine contrast of foliage around that lake afforded by Oak, Holly, Willow, and Hemlock Spruce, Deodars, Scotch Pine, and Pinus pinaster is such as a painter would love to study. On an out-jutting corner prominent from the lawn, and on the opposite side of the lake, is a small piece of rockwork made of the red sandstone. This has been done so closely to resemble nature as to deceive one of the most accomplished geologists of the age. Residing at the hall, he came hurriedly from his bed-room one morning and thus accosted his worthy host:—"Allow me to congratulate you, Mr. Sneyd, on having coal on your property." "Indeed!" "O yes, there is no mistake about it. Whenever the red sandstone dips in a certain way there is always coal." "Always?" "Yes, it is a sure infallible sign." "What if the blocks have been placed in that particular position?"

With this anecdote we take our leave of Keele Hall, and that reluctantly, as, besides being gratified by the superior gardening we went to see, there seemed to be over the whole place such an atmosphere of repose, of comfort, and of happiness. This is not to be wondered at, as, from all we saw and heard of new farm buildings, new or greatly improved cottages, new post-office, new schools, good reading-rooms, good libraries in connection with Mudie's for new publications, to which the working people have access, and the liberal support of a Keele farmers' club, where encouragement is given to every kind of rural and agricultural improvement, it required no great penetration to perceive that there was a practical every-day exemplification of the inscription on the new mansion, "*Suis quam sibi*," and of that far more homely family motto for the farmers: "Thank God for all."

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE decline of the late crops of Peas, Beans, Cauliflowers, &c., should be followed by their immediate removal, and no decaying or useless vegetable matter at this moment should be allowed to cumber the ground. If the vacancies be not directly required they had better be trenched, rough-dug, or ridged for exposure; the distribution of manure to be governed by a due consideration of the late and future crops. For instance: the Onion-quarter has probably received manure sufficient to carry a crop of Cabbage without further assistance. Strong-growing Peas and Beans impoverish the land; quarters which have been thus occupied might be appropriated to early Potatoes in due season. *Cauliflowers*, to prevent the destructive attacks of slugs on the young plants of these and of Lettuces mix soot and lime together in equal portions, and dust them over with it once or twice weekly. The Lettuces that are just coming into use should be lifted with balls and placed in frames. *Cabbages*, make good the blanks that may have occurred in the plantations of these and of Coleworts, and keep a large reserve to make plantations in spring, as well as to make good the blanks caused by the winter. *Onions*, look over the bulbs that have been stored, and remove any that are beginning to decay. *Potatoes*, see that the disease is not making its appearance amongst them, but if it has let them be picked over without loss of time. *Turnips*, thin the late sowing; but it is not necessary to leave them at so great a distance apart as the spring and early summer sowings.

FLOWER GARDEN.

As we have lately experienced a few cold frosty mornings the more tender kinds of plants, which are to be saved, should be taken up at once. Variegated Geraniums will not bear much frost; and where the plants have to be wintered in situations which are not very suitable for them, they should be taken up before they are injured, as they will be much more liable to damp off and die back in winter if the wood be injured by frost; to be kept over the winter just as they are lifted from the beds, and to be cut back early in spring after starting them into growth, when the cuttings will root freely in heat, and will make useful-sized plants by planting-out time. Proceed, therefore, with potting such plants with as much dispatch as possible, and if practicable a little artificial heat should be applied to help them to root before winter. The earliest opportunity may now be taken of removing all such plants as Auriculas, Carnations, Pansies, &c., that are growing in pots, and that have been temporarily protected from the rains, to their winter quarters; a cold dry frame, where provision is made for a circulation of air beneath and amongst the plants, is one of the very best situations for the purpose. But very little water to be given to these plants during the winter, as they only require just sufficient to prevent their tissues from drying up and shrivelling, and the drier they can be kept without this taking place the safer will they be from injury by frost, and the more healthy and vigorous to produce good blooms in the proper season. They should have air admitted to the frame daily, unless the weather is very severe and boisterous. They will require a moderate degree of protection in the most severe part of the winter; but otherwise the protection of the frame and sashes will be sufficient. Unless when alterations are in hand the principal work in this department for the present will be mowing and clearing, and if anything like neatness is to be maintained, sweeping up of leaves will soon require daily attention; also see to getting the gravel walks thoroughly cleared of weeds and moss; roll them frequently when wet to keep the surface hard and smooth.

FRUIT GARDEN.

The principal routine here will consist in gathering and storing all the late varieties of Apples and Pears. The present is by far the best time for lifting and transplanting very vigorous unfruitful trees on the walls. *Apricots*, *Peaches*, and *Nectarines* may be so treated with great advantage, and after the operation is completed they should be well mulched-up for the winter. Fill up all vacancies on the walls with young trees. Never let this be left until the spring if it can possibly be avoided. Where root-pruning is considered necessary now is the time to see to it.

GREENHOUSE AND CONSERVATORY.

Begin gradually to diminish the quantity of water, and water the plants in the morning so as to have the houses dry during the day. Do not, however, suppose that growing plants require to be dried-off during the dormant season: what they want is sufficient to prevent their drooping, saturation, of course, being avoided. Conservatory and stove creepers trained under the roof will require an additional cutting-in to allow more light to pass to the plants underneath. Such as have done blooming may be well thinned-out at once, and the remaining shoots tied somewhat closer together. Hardenbergias, Kennedys, and other early spring-flowering climbers should, however, not be disturbed at this season, or it will materially affect their beauty in spring. The present is a good time to procure from the nurseries or from the reserve garden a supply of Rhododendrons, Belgian Azaleas, and Kalmias for forcing; select plants well set with bloom and of the desired size. A portion of the stock of Roses, Lilacs, Honeysuckles, &c., in pots, may soon be placed in a pit to have a slight advance of temperature. The Chinese Primroses to be removed to a shelf in the greenhouse as near the glass as possible, with plenty of air at all favourable opportunities. Herbaceous Calceolarias to be treated in the same manner and duly attended to with water. Cinerarias to be protected from the ravages of green fly by fumigations of tobacco or by syringing with tobacco water.

PITS AND FRAMES.

Regulate the general bedding stock, and get the majority established in small pots. Give as much air as possible, and restrict the supplies of water to mature the growth as far as possible. All temporary pits for their accommodation should be completed by this time, glazing and other repairs must be forthwith finished. Common mats afford scarcely sufficient protection to the half-hardy plants in store-pits. For such purposes a stock of straw or reed mats should be made in wet weather.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

KEPT moving the surface of the ground amongst all growing crops. Find that most of the grubs have done their worst amongst Cabbage plants; made sure to kill every one before he had a chance to reach a second plant. Just moved the ground among such young plants with the point of a fine-tined fork. No vermin in the ground like to have it disturbed about them. Threw some lime and soot over and amongst the foliage of Celery, as grubs, slugs, and worms had begun to mark the leafstalks, which interferes with the look of the vegetable, at least when partly dressed, even if the heart is all sound and untouched. In stiff soils a layer of ashes round the stalks in earthing-up is a good thing, as none of these interlopers care much to pass through it. Fresh sawdust we have also used, but we cannot say we like that for two reasons: it is not good when undecomposed, or uncharred, for mixing with the soil, and if obtained at all from resinous wood it is apt to taint the Celery. Much the same may be said of tan. Next to ashes, the produce of a charred heap, burnt clay, &c., are very good for keeping the stems of the Celery clean. Men used to it put in the earth loosely first, then the ashes, &c., round the stem, and squeeze the earth to the ashes, so that no great quantity of ashes is wanted. For those not used to the work two pieces of sheet iron or zinc 1 foot or 15 inches long, 6 inches wide, and rounded so as to resemble half-circular drain-tiles, answer very well. The pieces are placed loosely on each side of the Celery plant, the inside filled with ashes, and the earth applied outside in the usual way, when the iron sheaths are drawn up and taken to another plant, the soil being firmed-up to the ashes. Six of these semicircular pieces, it matters not what they are made of, will do for a row of three plants across a bed.

Piled up into a long heap lots of prunings, thinnings, &c., collected during the summer, covered with weeds, earth, and sawdust, and set fire to it to char part, and burn up the other into ashes, clay being the outside covering. Took the opportunity to do this when our employer was from home a couple of days, as, if the wind set towards the

mansion, it would carry with it something different from the spices of Araby. Such heaps, however firmly you may tread them, emit a great smoke at first, but as the heat draws the contents into little compass, and they are more securely covered, the smoke and the fumes afterwards given off are of less consequence. In opening such heaps when the charring is about done, the men should cover their nose and mouth with a thin handkerchief, and keep their head away from the opening as much as possible. A little carelessness is quite sufficient to make the workers ill. Turned over also a rubbish heap in which waste vegetables, &c., had been placed, adding short grass, brushings of leaves, and similar materials, chiefly at the bottom so as to cause the whole heap to ferment considerably, which has a tendency to destroy vermin and seeds of weeds, whilst the top being covered with earth prevents most of what is valuable in gases from escaping.

Proceeded with routine much as last week, pricking out, planting out, and commenced third piece of bed in the Mushroom-house.

FRUIT GARDEN.

Much the same as last week. Gathering, storing, and preparing for alterations, &c.

ORNAMENTAL GARDEN.

Here, also, the work was much the same, in housing, cleaning, taking cuttings off, and gathering seeds, marking Dahlias, placing a little earth round stems, cutting down the forward Hollyhocks, the stems to be charred, &c. the chief work is, what we alluded to last week—preparing for the Calceolaria cuttings. We have just prepared ten lights of a cold pit, which though very shallow has the bottom below the ground level. To guard against too much damp we placed about 9 inches of dry litter over the bottom, such as that from which all the droppings and shorter straw had been shaken clean for Mushroom-beds. This long dry litter, therefore, was used more as a security against the damp rising than for any little heat it would yield. A little shorter and older litter was placed over the long stuff and firmly trodden. Upon that was placed about 3 inches of half-decayed leaf mould, or three-parts decayed leaf mould, mixed with the riddlings of the soil used, with a barrowload of lime previously added, and all well mixed together so as to settle any worms or slugs there might be in the leaf mould, &c. This was also firmly trodden. On this was placed 3 inches of sandy soil also well trodden again, being made of scrapings from the roadside a year old, rather loamy soil from the roadside, with about one-fifth of road-drift—mostly sand from flints ground by wheels of vehicles. This when levelled was covered with about one-quarter of an inch of that sandy road-drift, beaten all over with the back of the spade. The soil being dampish we give no water until the cuttings are inserted, and the one watering will serve them a long time. On Thursday we commenced putting-in the cuttings—say, 1½ inch apart, and in rows less than 2 inches apart. We will not be so successful as usual if we lose 1 per cent. Here the cuttings will remain protected from severe frost until they are given more room in temporary beds in the beginning of March. Some of our Calceolarias are still as fine as they were in the middle of July or the beginning of August, and striking late and keeping cool we consider the main causes of success. Will make arrangements for taking-in some of the tenderer subjects from the flower garden. As for Scarlet Geraniums in general, cuttings struck before the middle of October generally do as well if not better than old plants taken up unless good treatment can be given to them.—R. F.

TRADE CATALOGUES RECEIVED.

John Cranston, King's Acre, Hereford.—*Descriptive Catalogue of Roses*. 1863-1864.

Fairhead & Son, 7, Borough Market, London.—*Catalogue of Dutch Bulbs and Flower Roots*.

William Paul, Waltham Cross.—*Rose Catalogue*. 1863-64.

Sutton & Sons, Reading.—*Autumn Catalogue of Bulbous Flower Roots, Geraniums, Fruit Trees, &c.*

Smith & Simons, Argyle Arcade, Glasgow.—*List of Gladioli*. 1863-1864.

COVENT GARDEN MARKET.—OCT. 3.

The market continues well supplied with all kinds of fruit and vegetables, and the demand is good for the season. Grapes, Pines, and all hothouse fruit are quite sufficient for the demand. Pears are abundant, and Ribston Pippins are now brought in larger quantities. Madeira Oranges are coming in, and Lemons are falling in price. The best Cobs are bringing 65s. per 100 lbs. Cape Broccoli is now making its appearance. Of Potatoes the supply is still ample for all demands, and prices have undergone no alteration.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	6	4	0	Nectarines.....	doz.	0	0	0
Apricots.....	doz.	0	0	0	Oranges.....	100	8	0	12
Pigs.....	1	6	2	6	Peaches.....	doz.	6	0	14
Filberts & Nuts 100 lbs.	55	0	75	0	Pears.....	bush.	5	0	7
Grapes, Hamburghs lb.	1	6	5	0	dessert.....	sieve	2	6	0
Muscats.....	lb.	3	0	6	Pine Apples.....	lb.	3	0	6
Lemons.....	100	8	0	14	Plums.....	sieve	4	0	7
Melons.....	each	1	6	4	Quinces.....	doz.	0	9	1
Mulberries.....	quart.	0	6	0	Walnuts.....	bush.	14	6	20

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad.....	bush.	0	0	0	Leeks.....	bunch	0	3	0
Kidney.....	sieve	1	6	4	Lettuce.....	score	2	0	3
Beet, red.....	doz.	1	0	1	Mushrooms.....	pottle	1	0	2
Broccoli.....	bundle	0	9	2	Musd. & Cress, punnet	0	2	0	0
Cabbage.....	doz.	0	9	1	Onions.....	bunch	0	4	0
Capicums.....	100	1	3	2	pickling.....	quart	0	6	0
Carrots.....	bunch	0	6	0	Parley.....	bunch	0	3	0
Canflower.....	doz.	4	0	8	Parsnips.....	doz.	0	6	0
Celery.....	bundle	1	6	2	Peas.....	bush.	0	0	0
Cucumbers.....	doz.	2	6	10	Potatoes.....	sack	5	0	8
pickling.....	doz.	0	8	1	Radishes dos. bunches	1	6	2	0
Endive.....	score	1	3	2	Rhubarb.....	bundle	0	0	0
Fennel.....	bunch	0	3	0	Savoy.....	per doz.	0	0	0
Garlic and Shallots, lb.	0	8	0	0	Sea-kale.....	doz.	0	0	0
Gourds & Pumpk., each	0	0	0	0	Spinach.....	sieve	1	6	2
Herbs.....	bunch	0	3	0	Tomatoes.....	sieve	2	6	4
Horse-radish.....	bundle	1	6	4	Turnips.....	bunch	0	3	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 162, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

BERRBERY HEDGE (W. D. Paine).—The Common Berberry (*Berberis vulgaris*), is the best and only one of the genus suitable for a boundary hedge.

TRAINING VINES (J. A. P.).—It is not common to train the Vines down the rafters of a lean-to vinery, though it is common enough in span-roofed houses to train them up one side and down the other. They do very well in that way, but the experience we have of training them down the roof of a lean-to is against such practice. The Vines may be trained down from the back when the angle of the roof is 25°; but if it is a high pitch or even one near 45°, the Vines will not do well. We have tried it and been disappointed. It is the nature of a Vine to grow upwards, and although overluxuriance may be checked by training, yet this mode of training is not to be recommended for Vines in general. We should plant them in a border in front of the house, and move them as you propose in November, but apply no heat until a month before forcing is commenced. As you object to the naked stems, we should graft them, at the time of introducing them into the house, at the point of their entering the house with the kinds you wish, still retaining the old Vines to bear fruit until the grafts were of sufficient size to bear, when the old Vines would be removed.

PIGEON DUNG (W. D.).—It is one of the richest of all manures; and there must be something very peculiar in your soil if your gardener is correct in saying it is of no use. Even on very light soil if dug in it is very fertilizing, and still more so on tenacious loams. Buy our "Manures for the Many," the new edition of which you can have free by post from our office for five postage stamps. Pigeon dung makes an excellent liquid manure.

WORK ON ENGLISH BOTANY (F. Myatt).—"Wild Flowers of Great Britain," now publishing at our office in shilling monthly Numbers, contains coloured portraits of the species and full descriptions.

MADEIRA ENTOMOLOGY (N. A. D.).—Mr. Van Voort, Paternoster Row, has published a work on the Insects of Madeira, and if you write to him we have no doubt he will give you satisfactory information. The naturalist of Madeira is the Rev. Mr. Lowe.

WINTERING GERANIUMS (W. T. E. B.).—Your boxes are right for wintering Geraniums in for wintering. They will do very well in a cellar, but you must cut off all the leaves to prevent their moulding and decaying. We should think the landing on the top of the stairs would keep them very well providing you give them no water unless the leaves flag, and there is no current of air rushing at them. We need not say frost must be excluded, "it is an easy matter to move them to a warmer place in severe weather; and, whatever you do, do not place them in a warm room to induce growth at keep cool and dry, and in a rooming the plants in a cellar without any water."—

CULTURE OF CLIANthus DAMPIERI (Leighton B.).—It requires a compost of sandy peat half, and turfy loam, with a free admixture of silver sand, free drainage, abundant pot-room—it ought never to become pot-bound; it should have sufficient water to induce free growth, but not a drop more than is necessary, by which we mean that the soil should not be soddened with water nor become dust dry, so dry as to check growth. A warm greenhouse temperature with abundance of air and light suits it exactly. It does better planted out in the border of a greenhouse than in a pot, and rarely does any good after flowering once profusely.

PRESERVING THE ROOTS OF COLLECTED PLANTS (Flora).—The best way to keep the roots of the plants you collect during your continental tours is covered with damp sand in a botanist's tin collecting-box.

TANK-HEATING (T. M., Cheshire).—The water will flow in the tank without a division, but much better with one. Though it may be done, we do not approve of heating a large greenhouse with pipes from such a tank, as the circulation will be languid. We would advise heating the tank by taking the pipes through it, with a valve or a turncock where it joins the greenhouse, but with the circulation complete in the tank, and only put on the greenhouse when desirable. This will ultimately be the most economical plan, more especially if you cover your tank with wire. We should, however, prefer slate, and if you use cocoa-nut fibre it will let some vapour into it. That fibre is a bad conductor of heat, unless when wet, and then it does well enough. A thick layer of it, and dry, will not let the heat from your tank up.

KITCHEN-GARDEN EDGING (A Novice).—Bricks laid so as to have one of their angles upwards make an excellent edging. Thus A

HEATING TWO HOUSES FROM ONE BOILER (J. C., Crediton).—There will be no difficulty in heating both houses from the same boiler; but the boiler must be sunk so deep that the top may be a foot below the level of the return-pipe in the orchard-house. Then a T-pipe with valves would serve for the flow and return to both houses; or you may have a T return-pipe, and take a single flow into a cistern higher than the flow-pipes in vinery, and from thence take a flow to orchard-house and vinery, to be used or not as you desire. We see nothing to prevent your growing late Muscats as you propose; but we would decidedly alter the slope if we should have an upright wall at the south side and an open drain there. As it is now, all the water that falls on the border will tend or fall to the front of the house, and sooner than that we would have no outside border, but a close-cemented wall and depend entirely on the inside border. If you contemplated early Grapes it would be easy with the position of your border to take a pipe through the bottom of it.

PEARS OF QUINCE STOCKS (W. Hilder).—Beurré Superfin, Fondante d'Automne, Louise Bonne de Jersey, Beurré Hardy, Josephine de Malines, Baronne de Mello, Doyenné Gris, Winter Nellis, Beurré d'Anjou, Beurré Sterckmans.

ARRANGEMENT OF CUTTINGS OF BEDDING PLANTS (J. B. C. B.).—We think it would be taking much trouble without producing any satisfactory results.

SELF-REGISTERING THERMOMETER (J. Bryan).—Certainly do not throw it away. Write to Messrs. Negretti & Zambra, they will tell you what to do.

SEEDLING TROPÆOLUM (W. F. S.).—The bloom is brilliant scarlet, but there are many such, and too much depends upon the habit of the plant for us to give an opinion upon its merits from a single flower.

APRICOOT TREES IN POTS (J. G.).—We are glad you have succeeded so well with the Cherries. If you plant your Apricots out you will have less trouble in watering; but you will have more trouble in root-pruning than if you kept them in pots. On the whole, well nipped, and root-pruned when necessary, we think they do best planted out.

EVERGREENS FOR A NORTH ASPECT (A Subscriber).—*Berberis aquifolium*, *B. ampetrifolia*, *B. Darwini*; Box, Blotched-leaved, Curled-striped, Gold-edged, and Narrow-leaved; *Eucalyptus japonicus*; Holly, Gold-blotched Hedgehog, Silver-striped, and Minorca. But what shrub will thrive "18 inches from the foot of a Yew hedge?" Periwinkles might be used for surfacing, of which there are numerous varieties. The roots of the Yew will rob the other plants unless those roots are kept away by a wall or boarding.

GARDEN INFESTED BY INSECTS (M. S.).—If you could burn the surface soil conveniently that would be a certain cure, for it would not only kill the mature insects, but their eggs. The soil should be burnt fully 1 foot deep; but if that cannot be done, throw gas-lime over the surface, like salt to kill weeds on walks. Allow this to remain on the surface a fortnight; then dig it in, and keep forking the soil over through the winter. Be cautious about using gas-lime where there are fruit trees, and do not sow or plant anything until six months after the gas-lime is applied. We fear salt would do little good, but liming would do the land no harm. Soot is liked by few insects; a thorough dressing with it helps to clear the soil of insect pests. Guano sprinkled on ant-hills will mostly expel them; but arsenic mixed with honey, or sugar and water, is greedily devoured by them, and it, of course, destroys them. It must be kept out of the way of other animals.

PANSY-CULTURE (Leighton B.).—We presume your Good-Gracious Pansy is planted out, and that no cuttings have been taken. Although it is late take cuttings at once, preparing first of all a frame to put them in. Put 6 inches of coarse gravel at the bottom, then a layer of cocoa-nut fibre or some such material, so as to prevent stagnant water lodging. On that place 4 inches of moderately rich loam and about one-fourth of leaf mould, cover the surface with silver sand 1 inch thick, and in this insert the cuttings taken from the tips of the young shoots at such a distance that they stand clear of each other. Give a little water to settle the soil round the cuttings, and shut up close. They will strike in about six weeks, when they must have abundance of air and light, taking off the lights in mild weather. Another plan is to take up the old plants and winter them in a cold frame, from which any quantity of cuttings can be taken in the spring; but they neither make such good plants nor flower so early. Pansies for early flowering should be struck in July, planted in beds or borders in September, 9 inches to 1 foot apart. Cuttings struck late do well enough for summer display, and spring-struck cuttings make fine autumn-blooming plants. We prefer potting Pansies into small pots early in autumn and wintering them in a frame, and we shall follow that plan with our Double Pansies and take no end of cuttings from them next spring, and have a fine bloom right through the summer and autumn.

TANK OF PINK (A. E.).—It is a good double hybrid Pink; but we do not know that it has any special name.

POISONING MICE (*An Old Subscriber*).—Wheat boiled gently without burning the grains, in a strong decoction of nux vomica will kill them. This is really the "poisoned wheat" formerly sold, except that strychnine was used, which is the active principle of nux vomica. It poisons fowls as well as mice. Phosphorus pills also poison mice and rats.

WINTERING BEDDING PLANTS (*T. D. G., Warren House*).—The plants will do very well in the pits; but if the greenhouse is empty, and you can also there keep out frost, they will there do better still, as there will be more air and light. Your Pear is the *Beurré de Capiaumont*.

NAMES OF FRUIT AND PLANT (*F. E., Pilkington*).—The fruit is that of one of the *Granadillas*, probably either *Pasiflora quadrangularis* or *P. alata*; but the materials are not decisive; What are the stipules? Its merit as a dessert fruit is a matter of taste. It is much used in the tropics. The plant is *Celaia sublanata*. (*G. W.*).—1, Margil; 2, Golden Harvey; 3, Old Nonpareil; 4, Scarlet Nonpareil; 5, Gravenstein; 6, Adams' Pearmain. (*K. E., Leyton*).—Swan's Egg. (*G. K., Sevenoaks*).—No. 1 is certainly not Williams' Bon Chrétien, but Louise Bonne of Jersey; 2, Lewis's Incomparable; 3, we cannot make out—it appears to be Winter Neils; 4, Wadhurst Pippin.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (*C. H.*).—1, *Polypodium vulgare*; 2, *Lactrea Filix-mas cristata*; 3, *Polypodium vulgare cambricum*; 4, *Asplenium trichomanes*. (*Mrs. F. Tyler*).—It is the *Chlora perfoliata*, or Yellow-wort, one of our prettiest English annuals. It is also sometimes called Yellow Centaury. It is not a rare plant. (*W. O.*).—Your plants are—1, *Sedum Sieboldii*; 2, *Campanula fragilis*; 3, *Abutilon striatum*; 4, *Litobrochia vespertilionis*; 5, *Lycopodium Schottii*; 6, *Torenia asiatica*. (*Tyro*).—Of your Ferns No. 1 is *Cystopteris fragilis*, var. *angustata*; 2, *Asplenium adiantum-nigrum*.

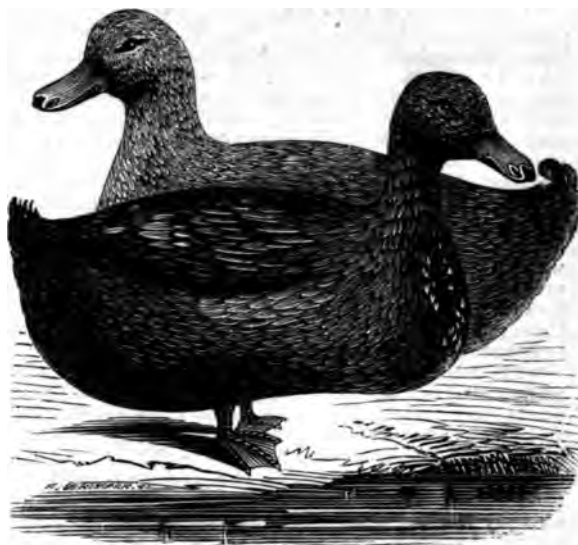
POULTRY, BEE, and HOUSEHOLD CHRONICLE.

SMALL BIRDS AND THE POULTRY-KEEPER.

We suppose it is because the small bird controversy has appeared in the "leading journal," that it has assumed so much importance with the public. Yet, if we reflect, all persons are more or less interested in it. Some like the birds and cultivate them; some like their fruit and hate the birds that eat it; some dislike the birds and kill them, not for damage, but because they dislike them. A correspondent writes to say she has been obliged to cover the tops of all her pens with small wire at a considerable cost. She is convinced, after a short time she has more than saved the amount in food—the sparrows and small birds can no longer get it. We have lately constructed a large pen about 20 feet square. We used the smallest wire netting on purpose, but there was one strip about 3 feet by 3 inches, where we were compelled to put some larger-meshed wire. We put it in the most out-of-the-way place, and where we thought it would be most inconvenient for the birds. We went to look at the pen last week, and found it full of sparrows, chaffinches, &c. We were armed with a small net, and thought we could capture some while they were seeking an outlet. Nothing was farther from their minds. They flew through the larger mesh, spite of all our provisions, with as much ease as if there were no wire at all. Since then we have watched closely. We like all sorts of birds, and do not wish to see them destroyed; but we are sure few people are aware of the quantity of food consumed by them. The blackbirds and thrushes never come into the pens, nor do they feed with the fowls. We do not accuse them of any mischief, so far as poultry food. They must fight their own battles with the gardeners. Twice or three times per week we feed entirely on Indian corn, not because we approve it much as food, but because it makes "banyan day" for the small birds.

We have been trying to come to something like a scale for feeding poultry, to be able to answer any one who wishes to know the quantity of food a fowl should consume. We are for the present beaten by the small birds. Their victory is only temporary, and within a few days we shall be able to resume our experiments. We agree with our poultryman, "The sparrow is the greediest and impudentest bird there is." They fly up when we go into the pen and get out of reach; they are down the moment we turn our backs. The point, however, on which we would insist is, that they consume a considerable quantity of food which is put down to the fowls, and which forms an item in the expenditure where everything has to be bought. So long as these visitors can get good corn and meal they will not look for grubs. Amateurs who keep birds in confinement will, therefore, not only lessen their expenses, but they will confer a benefit, either by excluding them from their aviaries, or by adopting Indian corn three days per week during the winter.

THE CAYUGA BLACK DUCK. ITS HISTORY, ORIGIN, &c.



THIS bird derives its name from the lake on which it is supposed to have been first discovered. But of its origin, like that of the domestic fowl, little is now known. It is very natural, therefore, to inquire whence so remarkable and valuable a bird was originally obtained; but the conclusion seems to be that it results from the intermixture of the Wild Black Duck (*Anas obscura*), not uncommon in our lakes and rivers. This appears to be the popular opinion at the present time; and if we are limited to any one of the wild breeds of this genus now known to us in our inquiries for the probable ancestor, it is to the Wild Black Duck, in our humble opinion, the honour should be assigned.

This species, as we are informed, has been domesticated in several places, and was quite common some fifty years ago in the barn-yards in the vicinity of Boston, &c. "In the year 1812," says Dr. Bachman, in a note addressed to Mr. Audubon, "I saw in Dutchess county in the State of New York, at the house of a miller, a fine flock of Ducks, to the number of at least thirty, which from their peculiar appearance struck me as different from any I had before seen among the different varieties of the tame Duck. On inquiry, I was informed that three years before a pair of these Ducks had been captured in the mill-pond. They were kept in the poultry-yard, and it was said, were very easily tamed. One joint of the wing was taken off to prevent their flying away. In the following spring they were suffered to go into the pond, and they returned daily to the house to be fed. They built their nests on the edge of the pond, and reared large broods. The family of the miller used them occasionally as food. They considered them equal in flavour to the common Duck, and were easily reared. The old males were more beautiful than any I have examined since, and as yet domestication has produced no variety in their plumage."

"The young of this species" (the Wild Black Duck), says Audubon, "grow with remarkable rapidity, and, like the Mallard, of which they seem to be only a variety, acquire the full beauty of their spring plumage before the season of reproduction commences. . . . In the early part of autumn the young afford delicious eating, in our opinion very much superior to the famous and more celebrated Canvass-back Duck."

"It is admitted," says a writer, "that our Cayuga Ducks originally sprung from the Wild Black Duck. However altered they may now appear in bulk, colour, or habits, the essential habits remain the same; no disinclination to breed with each other is evinced between them, and the offspring are as prolific as their mutual parents. The general tone of their plumage is closely repeated in all specimens."

For the following interesting account, and the very spirited portraits of the Cayuga Black Ducks figured at the

head of this article, we are indebted to the politeness of Mr. J. R. Page, of Sennet, Cayuga County, who is a successful breeder of them:—

"Of the origin of the Cayuga Duck," says Mr. Page, "I cannot give anything reliable. This Duck has been bred in the county so long, that all positive trace of the origin, so far as I can learn, is lost. Tradition says they are descended from a sort of wild Ducks that stop in Cayuga Lake and Seneca River, on their passage north and south, fall and spring; yet from hunters I have never been able to obtain or hear of any closely resembling them, either in weight or feathers. Yet they are called the 'Big Black Duck,' 'Cayuga,' or 'Lake Duck.' The first I ever heard of them was between twenty and thirty years ago. A farmer near Montezuma, on Seneca River, had a flock of Ducks bred from wild Ducks that he had caught, and they were very large and fine. Another tradition is, that they are a stock brought from one of the Hudson River counties" (probably those mentioned by Dr. Bachman), "but the general belief is as above, that they originated from a wild stock."

"The Black Cayuga Duck is perfection, is black with a white collar or neck, or white flecks on neck and breast—rarely black without white, and as the white seems inclined to increase, we usually select them nearly or quite black for breeding. The Duck has a faint green tint on head, neck, and wings. The drakes usually show more white markings than Ducks, and the green tint on head and neck is more strongly marked. They differ from the East Indian and Buenos Ayrean Ducks very materially, are much larger, longer in body, and shorter in leg, better feeders, but are not so intense in colour; indeed, beside the East Indian (and I have the latter), the Cayuga looks brown."

"The plumage of the Cayuga Duck," says another writer, "is of great richness, much resembles the Wild Duck; the drake's especially is magnificent, its head and neck being a rich lustrous green, with a white ring at the base of the neck, breast of a reddish-brown, the remainder of the body and wings partaking very greatly of the Wild Mallard."

CHARACTERISTICS.—"When well fed," continues Mr. Page, "the Duck begins to lay about the 1st of April, and usually gives an egg every day until she has laid eighty or ninety, when she will make her nest and sit if allowed; if not, will generally lay a litter in September."

"The Cayuga Duck is hardy, good size, and for the table is superior to all other Ducks or poultry of any sort; flesh quite dark and high-flavoured. If well fed they become very fat; they can be readily made so fat that they cannot step over a broomstick; they cannot raise themselves from the ground by their wings, a foot-wide board keeping my Ducks from my little trout-pond. My flock last year weighed—Ducks, one to three years old, 7 lbs. to 7½ lbs. each; Drakes, 9 lbs.; Ducks, 8 lbs., or 17 lbs. the pair; yet these are extreme weights, and only reached by careful feeding, and in very small flocks; 12 lbs. to 14 lbs. the pair would be a good average in large flocks. I once had a small flock that averaged at six months 16 lbs. the pair, but they had been forced to their utmost, and never gained weight after six months."

Another writer says—"the Cayuga Duck is very quiet in its habits, cannot fly, rarely able to rise from the ground; a fence 1 foot high will turn them; not disposed to wander from home; commence laying about the last of March; lay fifty to ninety eggs, when they wish to sit if everything is convenient; sit well; careless mothers; cross readily with other Ducks, and produce is certain."

"One of my Ducks," continues Mr. Page, "showed a disposition to nest early this year; sat on fourteen eggs; hatched thirteen young, and bids fair to raise all of them, as they are now (July) several weeks old, yet the Duck and young ones are more often seen apart than together."—C. N. BEMENT.—(Albany Country Gentleman.)

LOST FOWLS AT WAKEFIELD SHOW.

IN reply to Mr. William Lawrenson's letter respecting his loss of Bantams at Wakefield, I at once advised him of the loss, and also advertised them in your Journal, and wished him to charge a reasonable price for them. He at once replied that he would have the full amount, or he would sue the Committee and write a letter to your Journal, if his

claim were not paid. I thought we had a right to pay him, and having but £4 in my office at the time I received his letter, I sent it to him on account, and said I would bring his case before the next Committee-meeting. I did so, and was advised by one of the Committee to ask him to take the claiming price, less 10 per cent., as per rule of the Society, and allow us for the hamper I returned. He refused to comply, but wrote to Mr. Wainwright, and he brought the letter before the Committee, and they thought Mr. Lawrenson was too hard with them not to take the claiming price. Mr. Wainwright was requested by the Committee to inform Mr. Lawrenson that Mr. Crosland had met his case in a very manly way, and they trusted he would be satisfied with the £4. I am yet out of pocket the money I paid, as several of the Committee think we had no right to pay.

Mr. William Lawrenson ought to have the management of an out-door show. It would put him about to keep an eye on all. I engaged three men to feed and water the fowls, and the birds were all right at four o'clock, and then a very heavy storm of wind and rain came on. I quite expected all the Pigeons to be flying into the air, and they would have done so had I not placed boards on the top of the pens to keep them dry; but I am glad to say I got them all hampered. Several Bantam and other pens were blown partly off the platform, and were penned wrong. This took place at the time I was penning the Pigeons. The men engaged informed me that one of the Duckwing Bantams had been out. It was only the end pens, and they were Black Reds. I wonder if Mr. Lawrenson could have made the wind and rain obey his commands; if he could he would have been worth £50 to us on that day. As soon as the rain came on all the exhibitors commenced to pen their own birds, and the only fowls left for us to pen were those that came by rail.

Mr. Lawrenson ought to attend a few Yorkshire shows, then he would form an idea what the Committee has to do with out-door shows. It is impossible to prevent parties penning their own birds. If Mr. Lawrenson was Secretary, as I was, to take down the amounts and pay all the prizetakers on the ground, as I had to do, he would have plenty of time to look after penning the birds. After all we had but two mistakes, and we wish to do as nearly right as we can. I have had no other complaints. I sent all the birds off from the Wakefield Station the same night, and all the prizes were paid within three days of the Show, and I doubt if any one could act in a more straightforward manner than I have done. After hearing my reply I think your readers will not find much fault with the Wakefield Committee, and I can safely say we are out of pocket above £100. Mr. Lawrenson can have my post next year, as I intend to give it up.—JOHN CROSLAND, JUN.

[With this reply from Mr. Crosland the controversy must cease from our pages. It is very evident that the Wakefield Committee left all the labour for Mr. Crosland, and so far did not do their duty. It is quite equitable that 10 per cent. should be deducted from the price affixed to the pen by Mr. Lawrenson; and under the circumstance of the Show causing a heavy loss to the Committee, we think Mr. Lawrenson would only do as he would wish to be done by, if he accepted the £4 in full of all demands.—EDS.]

OSWESTRY POULTRY EXHIBITION.

ALTHOUGH the just-closed Meeting is the first ever held by this Society, in the hope of directing poultry-keepers to the most remunerative breeds for market purposes, and to also bring into local notice other kinds of the more strictly fancy-feathered varieties, it must not for a moment be conceived that the district around Oswestry is not deservedly renowned for its market fowls. On the contrary, for a long succession of years, even prior to the institution at all of poultry shows elsewhere, Oswestry market has supplied an amount of live poultry to various districts in quantities weekly that if here stated would to many of our readers appear altogether fabulous. On the Wednesday, which is the market day, consequently are numerous dealers to be regularly seen plying earnestly their avocation; and on visiting the railway station at the conclusion of the market, few strangers would be prepared to see the many railway truckloads of poultry thus being forwarded to

Birmingham, Birkenhead, Chester, Liverpool, Manchester, Wolverhampton, and other places. When it is called to mind that this supply seems but little shortened week after week the year through, all reflective persons will admit that to guide such wholesale producers to the most remunerative breeds is a step in the right direction, and such as will make ample returns for the amount of outlay and personal trouble that may attend it at the outset.

A few years to come will, doubtless, find many agriculturists around Oswestry who now consider "a fowl only a fowl whatever it may be," as having arrived at the more just conclusion, that each head of poultry they rear is of precisely the marketable value it will realise when sold; and that some "old stagers" who kept the "same fowls their fathers did before them, as doing well enough for anything," will find to again return to the principle just laid down would curtail their revenue by at least two-thirds of what, with care and management, may be then insured. It is at once candidly admitted that some few of our best breeds of poultry may not suit the neighbourhood, although, perhaps, as yet, never fairly tested. For instance: not a single Black Spanish fowl was exhibited at Oswestry—an incident that we cannot call to recollection as ever taking place at any poultry show before; but on inquiries on the ground, we find that the local breeders seem never to have seen them, although conversant with them by name. Now, for egg-production (and the sale of eggs never fails—at good prices too), it is well proved that Spanish fowls if not too highly bred are equal, if not superior, to most varieties.

As attention has at length been arrested to improved poultry-culture in this neighbourhood, a few years to come will bear conclusive evidence that the institution of a poultry show at Oswestry was a public good. One or two hints to the Committee of Management may not here be ill-placed. It would be wisdom on future occasions not to "restrict entries to sixteen miles round." This prevents local breeders from seeing what can be done elsewhere, and acts somewhat as a prohibition to their own individual advancement. Even, by way of argument, if the prizes for one year should go almost wholly elsewhere than locally, this fact is certain to produce an amount of emulation to hold their own that will infallibly bring improvements homeward on future occasions, and do everything necessary to remove their present apathy in local poultry-management. The trial will not only insure this success, which is a most important one, but it will also as undoubtedly triple the interest and numbers of visitors to future shows at Oswestry. The pens on this occasion were placed some 12 inches too high for easy inspection—a fault that will in time to come be easily rectified. Again, the time specified for the birds to be at the Show should be strictly enforced; to do so is only justice to those parties who send at the hour stated in the prize-schedule. If this rule is at all broken, one step only leads to increased delays, and it must be remembered punctuality is the very essence of the contract, and empty pens the greatest bane of any poultry exhibition. On the late occasion, by far the best Game fowls, and Geese also, came "too late for competition." As a first Show, these little contingencies must ever be expected, and as the Meeting was only in contemplation about a fortnight before being held, it was quite as well kept as could be fairly expected. We regret to say that unfavourable and heavy showers prevailed almost hourly.

The *Dorkings* were good, the entries of Greys being numerous; and the White ones were so perfect as to appear on the prize list, though the competition was undivided. Mr. Peplow Cartwright's Partridge *Cochins* were very excellent. Many capital *Game* fowls were present, but non-attention to matching the colour of legs was an almost general fault, and in some instances very good birds of quite different varieties were also penned together! Practice will prevent these mistakes in future. Another rather extraordinary feature of this Show was inattention to the number of birds sent together—in several pens one being short of the three birds required by rules; in others as many as even six were forwarded to a single entry. This rule of numbers can never be broken without loss of position in prizetaking. A goodly number of *Bantams* were shown of no particular value, save a pen of the almost extinct *Booted Bantams*. These were small, nicely speckled ones, such as would remind any amateur of long standing of his boyhood-days,

when such varieties were in high esteem, both for their extreme hardihood and good laying properties.

Some peculiarly good *White Call Ducks* were exhibited. *Turkeys* and *Geese* were quite in force and of good quality.

DORKING (Any colour).—First and Second, Lady F. Lloyd. Third, Hon. Mrs. Kenyon. Highly Commended, Hon. Mrs. Kenyon; E. Shaw, Oswestry. Commended, E. Shaw.

COCHIN-CHINA (Any colour).—First and Second, P. Cartwright, Oswestry. Third, Lady F. Lloyd. Commended, G. Williams, Oswestry; P. Cartwright.

GAME (Any colour).—First, T. Jones. Second, H. Crutchlow, Oswestry. Third, E. Evans, Hengued.

BANTAMS (Any colour).—First, Mrs. Davies, Oswestry. Second, Mrs. Lloyd, Aston Hall. Third, G. Williams, Lloran House.

HAMPSHIRE (Gold and Silver-pencilled or Spangled).—First, C. Coombs, Bradnethath (Silver-spangled). Second, T. Jones (Golden-pencilled). Third, G. Williams, Lloran House. Commended, A. E. Evans, Llanrhaidr.

PARTYARD CROSS.—First, Cap. Mansfield, Criggion (Brahmas). Second, E. Hughes, Oswestry (Grey Deckings and Cochins). Third, J. Groom, Hilsand (Crossed Deckings).

TURKEYS (Any colour).—First, W. Minnett, Trefarclawdd. Second, R. Leigh, Foxhall. Third, S. Lawrence, Llynelys. Commended, Mrs. Lloyd, Aston Hall.

GESE (Any colour).—First, G. D. Brittain, Sutton. Second, J. Hanner, Glanrafon. Third, R. Pente, Pentreclawdd. Highly Commended, Mrs. Lloyd, Wynnstay Arms; J. Thomas, The Newnes.

DUCKS (Aylesbury).—First, E. Shaw, Plaswilmot. Second, W. Minnett, Trefarclawdd. Third, Mrs. Lloyd, Wynnstay Arms.

DUCKS (Any other Breed).—First and Third, G. Williams, Lloran House. Second, W. Hughes, Pentreclawdd. Highly Commended, R. Morris, Knockin. Commended, H. Jones, Trefonen Hall.

Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, officiated as the Judge.

DAY'S GAME PASTE.

FOR the last five or six years I have been keeping poultry, and for the first and second years had no disease. Since then every year I have lost at least half of my chickens by the "Gapes." I tried various things which I was told were certain cures, but all to no avail; for want of space I could not change my yard. This year I had a brood of Black Spanish chickens which I prized much, being of Mr. Rodbard's strain. Like all the others, when about six weeks old they commenced coughing and gaping slightly. About this time I noticed advertised in your columns "John Day's Celebrated Game Paste;" I procured a canister, and followed the directions carefully, and to my great pleasure, in a week to ten days my chickens were quite recovered. A friend of mine who was losing nearly all his chickens, has since tried it with the same good success. I certainly will never be without some, it being in my opinion invaluable to poultry-breeders who cannot change their fowl-houses and yards every other year.—THOMAS ACE, Ystalyfera Iron Works, Swansea.

APIARIAN NOTES.

(Concluded from page 244.)

No. 8. *Frame-hive*.—*Ligurian queen*. Bees the best as to colour I had. In March populous. Large quantity of brood and very dry. Bees refused to work in super, though clustered thickly in it. A swarm went off and was lost; with it, of course, the valuable queen raised last year. Side frames of sealed honey of about 8 lbs. taken since.

No. 9. *Flat-topped Straw Hive*.—Old stock of common bees. Enormously heavy in March, though not fed at all through the winter. Moderately strong in bees. Supersed seasonably, but bees refused to work. If no swarm went off and was lost it shows a poor state of affairs within, as the bees are not numerous. A little work was made towards the close of the honey-harvest, and honey taken of about 8 lbs. weight.

No. 10. *Frame-hive*.—*Ligurian*. My original queen. A magnificent colony. In March very populous; great quantity of brood; a little food, and very wet. A thirteen-inch-square, shallow super made to hold the bars belonging to the frames in the stock-boxes was first put on. This was at different times raised by three other boxes, and the result was 54 lbs. of super-excellent honeycomb. The hive was inspected on August 10th, and two frames of sealed honeycomb and brood removed for an artificial swarm. Seven out of ten of the frames contained brood. I like these shallow supers, putting on one first; then as soon as the combs begin to approximate the glass window, drawing a wire below, raise the first and slip a second between, generally without bars or top. Thus the combs are extended downwards. This may be repeated as the boxes become pretty

full; but discretion must be used so as not to give too much space, or empty comb will be the only result.

No. 11. *A. Stewerton Octagon*.—Common bees. A swarm from No. 5 on July 4th. Had nearly filled its box (14 inches by 10 deep) with comb and sealed honey by the 17th of the month. Is quite heavy.

No. 12. *Common Straw Hive*.—A swarm from No. 6 on July 11th. Very large, more than filling the butt. A hole cut in the top, and a small super with a little comb put on. In six days the hive had reached a considerable weight. The super has been removed with a few pounds of honey, mostly unsealed.

No. 13. *Frame-hive*.—Ligurian-hybridised queen. Early in the summer some broodcombs were removed. The remainder with bees were shifted into a bar-hive and given away to a friend. Present state unknown.

No. 14. *Frame-hive*.—Ligurian. Artificial swarm of last year. In March was found to be rather weak, with little food, a small number of eggs, but no brood; quite dry, but suffering from dysentery. Some combs of brood with the bees clustering therein were given from Nos. 13 and 20. Bees united without the least fighting, and from that time this hive went ahead. On the 23rd of April it was carried out to my country apiary three miles off by my man under his arm. On the 30th of May the hive appeared full of honey wherever the comb was visible. An octagon super was given, and on the 25th of June a second was slipped under the first, which appeared nearly full. On the 6th of July a third super was put on the top of the whole tier of boxes, this last being partially filled with empty combs. Nett weight of honey taken was over 50 lbs.

No. 15. *Frame-hive*.—Common bees. An artificial stock made on the 29th of August. Having driven out the bees from two stocks belonging to Mr. Veitch, the well-known horticulturist of the Exeter Nurseries, I fitted up a ten-frame-box with combs, of which strong stocks had already been deprived. The bees were knocked out on the top of the bars and quickly descended. A little fighting ensued; but their differences were very soon concluded, and this bids fair to be as good a stock as any in my possession.

No. 16. *Frame-hive*.—Hybridised Ligurian. Bees of poor colour. In March was moderately strong with brood and food; quite dry. Destroyed the queen and added the bees and brood to No. 22.

No. 17. *Frame-hive*.—Common bees. Though not fed during the previous wretched summer, this hive in March was found to be nearly full of sealed honey, except where breeding was going on; and it soon became the strongest hive in my whole apiary. Great things were expected from it, and supers were early supplied. The bees utterly refused to work, and a magnificent swarm was lost. A second swarm was secured and united to No. 2 as before mentioned. About 15 lbs. of honey have been removed in surplus side frames.

No. 19. *Frame-hive*.—Ligurian. Artificial swarm of last year. In March not very strong; a little brood and food; dry. This hive gradually increased in strength. An artificial swarm (No. 1 as before mentioned) was made on June 1st. The prosperity of this hive was, in consequence, checked; and it has afforded nothing except broodcomb for another artificial swarm.

No. 20. *Frame-hive*.—Ligurian, hybridised. In March very populous, with plenty of brood and honey. A large super was put on in which the bees worked well. On examination on the 16th of June a great deal of brood was found in the super. This was removed and given to artificial swarm No. 1. A stop was put to all work in the super, and eventually a fine swarm issued and was lost. About 15 lbs. of honey taken in the super and from side frames.

No. 21. *Frame-hive*.—Artificially raised Ligurian queen from best brood of last year. Breeder of quite dark bees. In March was very strong, with large quantity of brood; very lamp. May 24th, super put on, to which the bees did not take very well, only making a little comb. On the 20th of June the super was removed, and the frames with the bees transferred into a mammoth-box capable of holding eighteen frames. The bees worked and bred through the greater part of this immense hive, and have been excessively populous. About 25 lbs. of honey have been removed in surplus side frames. It is evident that the bees are now in a state of weakness, and are not working as well as they did in the summer.

No. 22.—Originally a common bee, but was hybridised artificially raised last year. In March was weak with but little brood and food. On the 20th of June a large swarm was added to it, and it has since been very strong.

On the 10th of May the bars were removed from the frames and the combs fitted into a set of octagonal boxes, which were hung suspended to a "Salter's" scale, the weights being registered from day to day. I will not now give the results of the register, but defer for a future opportunity. Honey taken, 10 lbs.

No. 23. *Frame-hive*.—Ligurian. Artificial swarm late in 1862. In March not strong, but having a large quantity of brood with pretty much sealed honey, or rather artificial food. Quite dry. This was shifted into an experimental hive, and has not turned out very satisfactory. Only a very small quantity of honey taken. The bees and combs have lately been shifted into a proper-sized frame-hive, and with manifest advantage. A fine artificial swarm was made on the 29th of July, forming No. 25.

No. 24. *Frame-hive*.—Hybridised Ligurian. A splendid yellow queen—breeder of dark bees. In March very populous, immense quantity of brood, and a great deal of honey sealed. Not particularly damp; but a dreadful mortality from dysentery, which continued many weeks. The great breeding powers of the queen seemed to keep up the population, notwithstanding the ground being daily covered with dead bees. There was also constant fighting going on. On the 24th of May I resolved to break up this fine stock. Bees and some brood given to No. 6. Rest of brood to other hives. The queen was sent away to a gentleman who required one for a queenless stock.

No. 25. *Frame-hive*.—Ligurian. Artificial swarm commenced on the 27th of July. An unimpregnated Ligurian queen, rather dark, having been given to me by Mr. Woodbury, I proceeded to raise a nucleus by removing a broodcomb, having only young bees about emerging from their cells. The queen was secured in a perforated zinc box, and the nucleus brought within doors and kept tied up for two days. On the 29th No. 23 was removed from its place, and a very fine swarm of bees entered the nucleus. The queen was liberated on the 31st, and was all right two days afterwards. Inspected again on the 10th of August. No queen nor eggs to be found. Gave a suitable broodcomb from No. 10, original Ligurian queen, and three royal cells were in due time made and sealed. On the 20th Mr. Woodbury having made the singular discovery of two queens being at liberty at once within the same hive, presented me with the young one. She was a very fine queen as to size, and seemed by no means despicable as to colour, and I prized her accordingly. As the nucleus had been for a long time without a queen, I resolved to run the risk of introducing her at once among the bees. Having dabbed her wings with a little honey in accordance with Mr. Woodbury's suggestions, she was let out among the bees on the broodcomb, and was at once densely surrounded by them. Being now called away I was obliged to leave her, though fearing an unfortunate result to the experiment, as the bees appeared to be hostile towards her. The next day I had the satisfaction of finding her alive and very active—so much so, that she took flight from the comb in my hand, and made her way back among the other combs. She had already torn out the occupants of the royal cells.

To-day (September the 7th) I have again inspected the hive. A large space of one of the combs is filled with brood and eggs. The queen is a superb one, both as to colour and size—by far the best in my possession. It still remains to be seen whether her progeny be true, an event devoutly wished for by—S. BRYAN Fox, Exeter.

INTERNAL MOISTURE—CONSUMPTION OF FOOD IN UNITED HIVES.

I AM feeding all my hives, and wish to know how it is that those which contain comb and honey accumulate scarcely any moisture on the glass of the feeder; whereas the hives which contain only bees from cottagers' driven hives (several joined together), and such comb as they have made in three weeks gather so much moisture on the glass of the feeder that it requires constantly drying. If this moisture run into the food will it injure the bees? and should I keep a glass on these hives during the winter? Some are wood, some straw, all are doing well; but I cannot persuade the cottagers to save their bees and add them to their other hives. They think they will eat so much more honey during the winter.—A. B.

[The deprived bees either are or have been building combs, which raises the temperature of the interior of their hives very much, and this increase of temperature, in obedience to a well-known law, causes the condensation of an unusual amount of moisture in the glass to moisture in their food.]

will do the bees no injury; but a moderate degree of ventilation will probably be advantageous. It is a well-established fact that the bees of three or four stocks when united in one hive consume very little, if any, more food during winter than each one would have done if left separate.]

TWO QUEENS IN A HIVE—QUEEN'S DURATION OF LIFE.

I *FEAR* I must apologise to Mr. Woodbury for my seeming inattention in not sooner answering the queries he proposed to me some weeks ago. The fact is, that like him I have been pleasure-seeking, though not to the sea-side to encounter any such discomforts as he alludes to; but away among the everlasting cloud-capped hills—the placid lakes and wooded vales of one of the sweetest spots in Britain's isle. To the hills, too, my bees betook themselves—they after their pleasures, I after mine—they to collect, as best they could, in this our fickle climate, the nectared treasures of the purpled heath; and I to inhale its balmy perfumes, climb the alpine steepes, and amidst the quietudes and solitary grandeur of nature, to enjoy for a short season the calm delights of country life. Having now returned, therefore, to home and to duty, I take up *THE JOURNAL OF HORTICULTURE* and re-read some of the more recent communications on apian matters. And first with respect to the queries already referred to.

The first problem I am asked to solve is the fact of two queens being found in a hive at the same time. Before giving an opinion of this case I could have wished to be in possession of the particulars before promised by Mr. Woodbury. It is always difficult, in the absence of knowledge of full particulars and circumstances, to do more than merely guess a solution. I believe I may safely enunciate this truth without fear of contradiction, that only one prolific queen will be tolerated at a time in any hive; and that, as a general rule, more than one unprolific queen, or a prolific and an unprolific queen, can remain but for a short period in the same hive. These are axioms which experience and observation will homologate and confirm. The question then is, Under what circumstances are two queens found in a hive? for it will be seen that I have assented to this as a fact. My experience is to the following effect:—

1st. More than one unprolific queen may be found in a hive in certain contingencies, such as during unfavourable weather, prior to after-swarming.

2nd. A reigning prolific queen and a virgin queen may co-exist for a short time under similar circumstances before first swarming.

3rd. A superannuated queen may exist simultaneously with her successor for a brief period; but I must guard my belief by the confession, that in such circumstances my experience does not warrant me in asserting this as a fact; as in such a case I have found the reigning queen disappear from the stage before her successor entered. I may here refer to an article by me inserted in No. 77, New Series, of this Journal, showing the wonderful instinctive foresight manifested by the bees under such circumstances in thus providing against the impending loss of their infirm sovereign.

The second query refers to the longevity of the queen bee. The queens which I had the pleasure of transmitting to Mr. Woodbury were somewhat above two years and three years old respectively; but this, as will be at once perceived, can by no means settle the question as to the longevity of the queen bee. On this subject I have much curious information; but it would require more space than I intend occupying at present to enlarge upon it.

The natural life and the real life of the queen bee have, if I may so express myself, no congruity the one with the other; for my experience shows that her existence may extend sometimes, though rarely, to nearly five years, or it may be cut short in less than as many months. Her condition, circumstances, and the ever-varying contingencies to which she is exposed, often determine her fate long before what may be termed her natural life. I never had a queen under the most favourable circumstances that lived much beyond four years, except one whose age was four years and ten months. The queen of a peculiarly-coloured grey colony of bees, to which I have had occasion more than once to

refer in the columns of this Journal, and whose brilliant golden appearance enabled me easily to follow her throughout her whole career, lived, or I should rather say reigned, for three years and four months; at the end of which period, being stricken with many infirmities, her subjects rose up in revolt against her, and she was accordingly dethroned.

In regard to the foul-brood question I may have to say something by-and-by. Meantime I must cordially concur with Mr. Woodbury in not being contented with the mere "ipse dixit" of any one on the subject, even though that proceeds from what he calls "the great centre of bee knowledge." A verdict without assigning reasons in such a case I look upon as valueless. We have all heard of the old sayings, "Least said is soonest mended," "*Viv sapit qui pauca loquitur*."

"A STEWARTON APIARIAN" must be told, however, that it is he that is "quite at sea" in supposing that I treated the subject of foul brood at all upon the principles he asserts. I think my language is so plain, that "he who runs may read." I shall, perhaps, have a few words on "an experimental apiary" in the next or following Number.—J. LOWE.

TWO QUEENS IN ONE HIVE—MISHAPS IN UNITING ENGLISH AND ITALIAN BEES.

I REGRET to have to announce the death of the junior of the two queens whose inexplicable presence in one hive during autumn was described by me in page 157. I presented her at the time to my friend Mr. S. Bevan Fox, by whom she was placed at the head of a small colony, in which she commenced egg-laying, and proved herself amazingly prolific, thus completely negating Colonel Newman's hypothesis as to her being either diseased or barren. Unfortunately Mr. Fox found it necessary to add to the number of her subjects, and although the operation was performed with the utmost precaution, a terrible fight was the consequence, which also resulted in the death of the poor queen herself. Being a pure Ligurian her demise is much to be regretted; and, curiously enough, I met with a similar misfortune brought about in exactly the same manner almost on the same day. These fatal occurrences prove the danger of uniting bees of different species even when the operation is attended with every precaution that has been suggested by the experience of others as well as by that of—A DEVONSHIRE BEE-KEEPER.

VIRGIN QUEENS.

I SHALL feel obliged by having the opinions of the writers on bee-keeping in *THE JOURNAL OF HORTICULTURE* on the following cases which have occurred in my apiary.

I made an artificial Ligurian-hive on the 23rd of July by taking two bar-frames of brood out of my Ligurian-hive, and putting in a swarm of common bees with the combs, depriving them of their own queen. I examined it on the 28th of July, and found seven queen-cells in process of construction; looked again on the 7th of August, and saw only two queen-cells sealed up; and again on the 12th of August, and saw a beautifully-marked Ligurian queen. On the 25th of August she was laying eggs in worker-cells, also in drone-cells. I examined her again on the 8th of September, and found what I partly expected from the former examination—that they were all drones; and on the 14th the first-laid drones were just coming out of the cells, and drone-brood was still in all stages. Can any one inform me if there is any chance of this queen laying worker eggs?

Another case is the following. When the old Ligurian lost its second swarm on July 16th I took out two combs of brood having five queen-cells sealed up, and gave it a swarm of common bees to hatch the queen. This hive was taken to the heather on the 7th of August; and we examined it on the 29th of August, and found there were only drone eggs but no queen. It will be remembered by those who take an interest in bees that I noticed a similar case last year in one of my artificial swarms; but I would not assert positively that there was no queen present, as the hive was always strong in bees, having supplied it frequently with combs of young brood, and therefore might not have seen the queen in my examination. But in this

case there is no doubt whatever. There are not more than five hundred bees in the hive. We removed every bar and comb into another hive. We did this three times, and there were other two persons along with me at the time without any covering on their faces, so that we are perfectly certain that there was no bee in the hive which had the slightest difference from a worker bee, as we examined every one carefully. Had we seen one I would have retained it and sent it to Mr. Woodbury for microscopic investigation. In some of the cells there were four and five eggs, apparently just laid that day.

I have here, then, a case of a queen which can lay drone eggs only—has she had any matrimonial engagement? and another case of bees with no apparent difference from workers, laying drone eggs also—have they had any “matrimonial engagement?” I am informed that naturalists maintain that to be impossible. If that be true, and worker bees can lay drone eggs, what is to prevent an unmated queen from doing the same?

I cannot say that I believe in the doctrine of parthenogenesis. If it be true it must lead us to believe in many strange circumstances; but to me these two cases which I have attempted to describe go far to prove the truth of parthenogenesis; and I would like very well to hear the opinions of those who are opposed to and those who hold that theory.—ALEX. SHEARER, *Yester Garden*.

[Parthenogenesis is a subject more suited to a physiological periodical than to our columns, and when touched upon must be handled circumspectly, for our Journal is read in the drawing-room as well as the study.—EDS.]

PARTHENOGENESIS—AGE OF QUEENS— HONEY SEASON.

I SCARCELY know whether it is worth while to prolong a discussion respecting parthenogenesis; but I have read the letters in Nos. 25 and 30 as directed, and still think it possible that there may be yet found out some other way of accounting for a live drone proceeding from a virgin queen than has been dreamt of in our philosophy. It may be my want of scientific knowledge that keeps me sceptical. I agree, however, that parthenogenesis is nearly proved. I believe that a virgin queen may lay eggs, and that somehow or other those eggs may produce drones; but I doubt if you were to place her in fresh-made comb, or rather in a hive without any, and with young workers, whether a single egg she lays would vivify.

Alas! I am not so near a convert to the opinion of “A LANARKSHIRE BEE-KEEPER” as to the age of a queen. Surely there are many reasons why my opinion may be the right one, and I have the chance in my favour that “A LANARKSHIRE BEE-KEEPER” may have mistaken one queen for another, particularly if it can be proved that young queens and the old one exist a few days together at liberty in a hive. I cry his mercy therefore, and beg to differ from him. I rejoice to hear his bees have done so well on the moors. I sent mine to a moor near Farnborough; but they have not done so well as last year. I have no heather to speak of within many miles of my present abode.

In reply to Col. Newman, I may state that in 1857 one of the best honey-gatherings I ever knew took place in the latter days of August or first in September when I was living in the Isle of Axholme. There were a few patches of heather two miles off, and heather honey was stored inasmuch as you could “nose it” in front of the hives; but the bulk of the honey then gathered must have been from other sources, as the moor the heather grew on was small in extent and only partially covered with heath. Trees were not plentiful in my part of the Isle, and the only flowers I knew of, excepting clover, were those of the second crop of red clover. Very few bees do not like working on red clover.

merous in the autumn than the ordinary-sized wasps; and this year again, though there are so few wasps, the large ones are beginning to appear in greater numbers than the smaller ones.—B. F.

[Drone or male wasps are both large and small, the latter being probably bred in cells usually appropriated to neuters. They are armed with stings; and the large males, being bred in similar cells to those in which queens are reared, are much about the same size, but may be distinguished by the greater length of their antennae. Unlike drone bees they take part in the labours of the nest from which they are not expelled, but survive until the autumnal frosts destroy the whole community with the exception of the queens (of which many exist in each nest), which alone survive the winter to found fresh colonies in the spring. Including hornets, there are seven varieties of wasps indigenous to this country. The different species vary much in size.]

OUR LETTER BOX.

BILL OF ROVEN DRAKE (R. M. S.).—The bill of a Roven drake should be yellow with a green shade on it. Any other colour is a disqualification. It should be exactly the colour of the Wild Mallard's bill, and that is never black.

MIDDLEWICH POULTRY SHOW.—Mr. Jessop, we are informed, had the second prize for Black Ducks, and Mr. Dixon had the first prize.

DESTROYING VITALITY IN EGGS (J. W.).—The eggs of your prize fowls which you wish to send to market, can be prevented hatching by having a needle thrust through the shell at either end. You ought to explain that they are so treated to prevent a purchaser being disappointed.

APIARIAN MISMANAGEMENT (A. A. Y.).—Your bees will not long survive stupefaction by tobacco smoke and the plunder of their stores. The best and most merciful plan will now be to kill them outright by means of brimstone, and appropriate any honey that may remain. Those combs which are of a dark brown colour have been used for rearing young bees, and their cells are empty owing to the breeding and honey-gathering season being over. Had you intended to adopt the depriving system you should have placed a small super on the hive soon after it was stocked, which might possibly have been filled by the autumn and removed without injury to the bees. On the ordinary swarming system the colony should have remained undisturbed to swarm next year, in the autumn of which you might probably have been able to have appropriated the contents of one or more hives without destroying your stock. Before again commencing bee-keeping get some cottager to teach you the rudiments of ordinary management. Buy “Bee-keeping for the Many,” which will tell you how to convert empty combs into wax, and give all the information you are likely to require. When you have in some degree mastered the subject you will yourself be able to instruct your unlettered subordinate, whose brains, as you very justly surmise, are only likely to become more addled by long articles being read to him on the abstruse branches of apian science. He was, however, quite right in giving the stock a waterproof covering. Bees in ordinary straw-hives require no ventilation beyond the entrance.

GLASS OF HONEY (N., Newark).—Write to Messrs. Neighbour & Son, 127, High Holborn, and ask what they will give for it.

DISCOLOURED BEES (Moor-side).—We believe the discoloured bees are simply covered with white pollen, which is no inconvenience or injury to them; but, on the contrary, a sign of the prosperity of the stock whose Ligurian queen is probably “multiplying the species” with the wonderful rapidity peculiar to her race. If you still entertain the idea that the discoloration may arise from a fungoid growth, and will forward to us a few of the bees thus affected, we will endeavour to decide the point by the aid of the microscope.

GREY LINNET (C. H.).—Bathe the bird's eyes and feet with warm water, and give it milk and bread. It should also be kept very warm; but we fear that it is past recovery.

DOG WITH SWOLLEN EARS (A Subscriber of Long Standing).—Your Labrador dog has cankered ears. The following is the treatment recommended by Mr. Meyrick:—“Feed the dog on a vegetable diet only, give a dose of castor oil, and three times a-day use a lotion composed of one part goulard water and four parts water. Two persons are required to apply the lotion properly; one to hold the ear and keep the dog steady, and the other to pour in the lotion, which should be allowed to sink well into the passage of the ear. After this let a cap be placed on the dog's head, which may be made thus: Take a piece of thin calico of an oblong square shape, and large enough to cover the whole of both ears; along each of the two longest sides sew a piece of tape, having ends about 4 inches in length, with which the cap can be securely tied on below the dog's head. The object of this cap is to prevent the flapping of the ears. If made of sufficiently thin material, and if it does not press on the ears, it will not increase the inflammation, as it has been said to do. Abscesses must be lanced, and care taken that no matter is left in them. After the operation, lint soaked in the lotion may be put for a day or two in the seat of the abscess, and the ear may then be left to heal of itself.”

LONDON MARKETS.—OCTOBER 5.

POULTRY.

Trade is still lamentably bad. Little or no demand for poultry, and a large supply.

	s.	d.	s.	d.		s.	d.	s.	d.		
Large Fowls	2	6	to	3	0	Partridges	1	6	to	1	9
Smaller do	2	0	to	2	3	Grouse	2	6	to	3	0
Chickens	1	6	to	1	9	Hares	2	6	to	3	0
Geese	1	6	to	1	9	Rabbits	1	4	to	1	5
Ducks	1	6	to	1	9	Wild do.	0	8	to	0	9
Pigeons	1	6	to	1	9						

WEEKLY CALENDAR.

Day of Month.	Day of Week.	OCTOBER 13—19, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. a.	
13	Tu	Sweet Sultan flowers.	60.4	42.4	51.4	18	22 af 6	11 af 5	13 7	8 5	1	13 a 37	286
14	W	Fieldfare arrives.	59.7	41.3	50.0	17	23 6	9 5	22 8	41 5	2	13 51	287
15	Th	Virgil born, 18 b.c.	58.4	40.9	49.6	17	25 6	7 5	40 9	20 6	3	14 5	288
16	F	Vallisner died, 1730. Bot.	58.6	40.2	49.4	16	27 6	5 5	46 10	9 7	4	14 17	289
17	S	Foxhunting begins.	58.1	41.1	49.6	15	29 6	3 5	53 11	9 8	5	14 30	290
18	Su	20 SECOND DAY AFTER TRIN. St. LUKE.	58.1	41.6	49.8	17	30 6	0 5	37 0	19 9	6	14 42	291
19	M	Virginian Creeper leaves fall.	59.5	39.8	49.6	17	32 6	38 4	19 1	24 10	7	14 53	292

From observations taken near London during the last thirty-six years, the average day temperature of the week is 58.9°, and its night temperature 41.0°. The greatest heat was 76°, on the 14th, 1845; and the lowest cold, 22°, on the 19th, 1845. The greatest fall of rain was 1.04 inch.

INSECTS AND THE ATMOSPHERE OF HOTHOUSES.



In this country, at least, all danger to property from beasts of prey has long ago ceased to exist; but it still remains a fact that the condition and industry of the human race are seriously interfered with and injured by the deadly onslaught of insects of various kinds, with which the art and ingenuity of man have not yet

been able to cope. In some parts of the world the inroads of certain insects are regarded with terror; and the result of their collective force, with their minute and complicated machinery of destruction, baffles all the resources of man. A correspondent writing from France says that whole forests have been stripped of their green leaves—left as bare as winter by the ravages of the May bug. Humboldt tells us of a small ant which offers invincible opposition to the civilisation of certain parts of the world by devouring everything in the shape of books and parchment, so that many provinces in Spanish America cannot produce a written document a hundred years old, and the results of the genius and wisdom of the country cannot be transmitted to posterity. In other tropical countries, we are informed that a small white ant clears away whole villages as effectually as would a fire or a flood. In some parts of South Carolina the Pine trees have been destroyed to an alarming extent by the ravages of a small white bug, which at one time cleared away every tree over many thousands of acres. It is scarcely credible that the larvæ of an insect should in one season have completely destroyed many thousands of acres of trees which measured 3 feet in diameter and more than 100 feet in height. Then there is the corn weevil, which devours storehouses full of grain, by extracting the flour and leaving nothing but the husks. The ravages of the locust are too well known to need being explained, and are a wonderful example of the formidable and dreaded power of the insect race. But to come nearer home, the turnip fly and wireworm are sources of great annoyance and loss to our farmers. Our very ships are not safe from the ever-busy depredations of insects; and the embankments and docks of many parts of Europe have been threatened by the collective power of beings, the individual insignificance of which might be worthy in one sense of man's contempt.

But what, it may be asked, has all this to do with the operations which most concern the readers of this Journal? It may simply be answered that no gardener need be told how great a relation the insect tribe bears in the battle he has yearly to fight in the cultivation of many things, and more particularly in the case of these plants and fruits which have to be produced and

brought to perfection in an atmosphere artificially enclosed and heated. The little knowledge of the best modes by which insects may be impeded in their destruction of much that concerns us, and that is valuable to us on account of the labour and means which the growth necessitates, is, I think, often very forcibly brought before us, particularly in the case of the great host of amateurs which are every day stepping into the ranks of gardening. It has been remarked that the more artificial the circumstances are under which plants and fruits are cultivated, the more trouble arises from insects. While certain insects make their appearance out-doors more or less every year, and give much trouble and work much mischief, still it is in our forcing-houses that the incessant watch must be kept, and that the arm must be always prepared either for or to prevent war with some determined confederacy of insects.

The object of these notes is not so much to deal with the various compounds which are used as insect-eradicators, nor to notice their effectiveness to the end for which they have been recommended, as to call attention to a point which, it must be admitted, has not come in for that share of attention from gardeners that it deserves—namely, the application of some of the facts which Chemistry has revealed to the composition of the atmosphere of hothouses, and to ammonia as a preventive in the case of that inveterate army of redcoats named red spider, which costs us so much care and labour, and after all works so much mischief. That the temperature and moisture of the atmosphere of hothouses are matters of great importance is beyond a doubt. All gardeners who have to force flowers or fruit cannot neglect these two matters with impunity. In order to apply the two agents just named in the most exact degree Science has furnished us with instruments for our guidance. We have the thermometer to indicate the proper degree of heat, and the hygrometer to tell us to what extent the air is charged with moisture. And this is of great importance; for no matter how exactly suited to the nature and wants of a plant are the mechanical and chemical conditions of the soil in which it is planted, the heat and water with which its roots are stimulated and fed, if the heat and water of the atmosphere are either too great or too little for healthy action. So much is this a matter of importance; that were we to take the most elaborate treatise on the cultivation of any given plant or fruit, and expunge from its pages all the rules and precautions about atmospheric heat and moisture before placing it in the hands of a beginner, what a great gap would be made in the rudiments of culture! The most elaborate directions might be given on the construction of the forcing-house, and the character of the ingredients which should compose the soil in which a Peach or a Vine will grow most satisfactorily; yet without some definite rules for guidance in the matters of atmospheric heat and moisture to be maintained at the different stages of growth, the inexperienced would to a large extent be in the dark, and disaster would be sure to follow.

By means of cheap glass and the ever-growing compe-

tition in trade, the gardeners of this country are more than ever enabled to apply with the greatest exactness the degrees of atmospheric heat and moisture required by plants from more favoured climates than that of this country. The days of thin glass and ricketty old flues are fast being numbered with the past, and more than ever are we enabled in most instances to excel the open-air productions of summer lands. It must not, however, be overlooked that the means which have been called into operation to enable us to supply with the greatest steadiness the two elements referred to, are attended with evils which require mitigation. The almost air-tight manner in which hothouses are now being constructed is productive of the deleterious influences of a close and impure atmosphere; and a pure and constantly renewed atmosphere is considered of so much importance, that means are now being put in operation by which, in the most severe weather of winter, a constant change is effected without the dangers and evils previously consequent on the admission of large volumes of frosty air for only a short period of the day. Appliances of this kind have now arrived at so advanced a condition, that it can only be by the agitation of many years and the friction of many minds that any further steps of importance can be looked for. We are apt to think so, at least, and are ready to ask, What more can be done? Can we not press into our service fresh aids to cultivation, which shall be grounded on demonstrated and self-evident principles? To what extent have we pressed into our service the knowledge which has been placed within our reach by our Liebig's and Johnstons? Or can it be said that the scientific research of such men has simply explained to us the effects produced by the toiling pains of merely practical men? Be this as it may, it is undoubtedly a fact that the practical application of the discoveries of scientific men generally proceeds with cautious steps; and we have much to thank those bold and curious spirits for, who are generally less benefited by their experiments than are the community at large. A generation produces few men like Knight and Mechi; and however such men may have benefited the art of cultivation, they are generally laughed at by no small portion of their self-satisfied compeers.

It is to be feared that gardeners are very apt to look into the researches of scientific men, and store some of the more striking facts which have been demonstrated without once attempting to reduce them to practice; and, strange to say, dabbles in matters of science are ever associated in many minds with crack-brained experimentalists, incompetency, and unsuccessful practice, just as if the possession of correct knowledge and the successful application of it were antagonistic—an idea which we fancy would be hard to prove by any species of reasoning. No one can possibly regret that the march of horticultural appliances has enabled us to free ourselves to a great extent of the labour and filth of the cumbrous dung-lining system. On the other hand, it certainly is a question whether we have not left behind us some of the redeeming points of that old and obsolete system of forcing.

Many of us well remember how vigorous and healthy many plants used to grow in M'Phail-pits heated with dung and leaves, and how many a sickly plant when placed in dung heat regained that hue of health which nothing else would impart. The almost sere and yellow leaf would become green and full of substance under the influence of the carbonic acid and ammonia evolved in the fermentation and decomposition of stable-manure, and with which no modern appliances of heat are naturally accompanied. It would be endless to refer to the many plants which thrive better, and are more free from insects under the influence of dung heat, than that supplied by either flues or pipes. Many gardeners to this day who grow Gardenias, and even two other stove plants which are very subject to mealy bug in the common stove, yet find that in dung heat they are comparatively free from the pest. It has even been asserted that subjecting Pines which are infested with white scale to the steam of dung-linings, will rid them of so potent an enemy.

It is a well-demonstrated fact that carbonic acid and ammonia form the chief food of plants, and these two constituents are freely given off during the progress of the fermentation of dung beds, and this, in great measure, accounts for the

vigorous growth and dark green appearance which dung-frames invariably impart to plants. This is the deficiency which is attached to the use of modern heating appliances; and surely it cannot be beyond the powers of the gardener's resources to charge the air in glass houses with one or both of these gases, so that the plants, largely capable as they are of imbibing nourishment from the air, can appropriate and assimilate them. Are we to conclude that an atmosphere resembling that produced by fermenting dung and leaves cannot be attained when heat is obtained from hot-water pipes? Far from answering such a question positively, it is at the same time questioned if ever such has been systematically attempted.

In potting plants we have spared no pains nor attention in feeding them through their roots with all the proper elements of nourishment. Natural circumstances are imitated to the best of our knowledge, and as far as artificial circumstances will permit. But all the while we are, it is to be feared, practically forgetting that the stems and leaves of a plant are no more in a natural condition in a very small amount of tightly-enclosed air than are the roots when cramped up into a pot. The plant is removed from the breezy air of heaven, and packed up into a glass bandbox, and is too often left for long and weary hours closely shut up, to rob the air of its scanty supply of food, and to charge it with gases injurious to itself. This is something like suffocation and starvation combined, and is followed, as a consequence, by the more apparent and no less desperate evil of insects, which are rarely developed in the ammonia- and carbon-charged air of a dung-pit. Red spider and white bug revel in the one case, while in the other they are far less likely to make their appearance at all, and when they do they never become so formidable and destructive.

If these inferences be correct, it is surely time to inquire whether there are no means within our reach of producing an atmosphere in our forcing-houses more akin to that produced by fermenting dung and leaves without having recourse to the cumbrous and untidy presence of a heap of those materials. That this would be desirable in the forcing of the great majority of our plants and fruits will scarcely be questioned. There may be differences of opinion as to how best to make such applications, but their beneficial results have been of late very strongly impressed on my mind by various results. In the early part of summer it was resolved to plant a house, which had formerly been a Peach-house, with Vines. The house is a very old one, having been erected about ninety years ago, and has, consequently, many snug retreats for insects, and red spider in particular. The Vines were struck from eyes in spring, and planted out when not more than a foot high. For a time they progressed favourably; but red spider, which has been a fearful pest out and in-doors here this year, soon attacked them, and in a very short time brought the young plants to a complete stand-still. The popular remedies were applied. The Vines were syringed, the hot-water pipes were rubbed with sulphur, and fumes raised enough to choke one, but the enemy was as active and destructive as ever. All hope of getting the Vines to the top of the house this year was given up. Their points were in some cases black and leafless from the effects of the spider and the syringe together. I then heard of an amateur who had invariably been much troubled with red spider, but who had escaped it this season, while his neighbours were being sadly annoyed with it. He attributed his success to the regular application of ammonia to the atmosphere of the vinery. I then mixed up a small potful of Peruvian guano, and applied it regularly to the pipes of the vinery, and so strongly was the air charged with ammonia from the guano that it affected the eyes on entering the house. This was regularly continued, and in less than three weeks the Vines had changed to a dark green, began to grow vigorously, and not a red spider could be found in the house. The Vines soon found their way to the top of the house, except a few which had been too severely punished by the spider ever to make free growth afterwards. The change from a pale hue to that of a dark green in the case of these Vines was next to magical.

In our Pine-pits here guano has been regularly applied to an extent sufficient to make the atmosphere smell strongly of it, and all who are in the habit of seeing our Pines are struck with their almost black green tinge and their vigorous

stocky growth. These and other instances have strongly impressed on my mind the importance of imitating somewhat more the atmosphere of our old dung-pits; and seeing that the atmosphere of our glass houses is almost, if not quite, as easily influenced as the character of the soil in which plants are grown, the idea of success in the matter is far from being so utopian as many that have been broached. I believe that in the growth of some of our fine-foliaged plants—such as Begonias, Cyanophyllums, &c.—the effects of such an atmosphere would be most marked.

The intense light which is available in hothouses now as compared to former times, resulting from the use of more glass and less timber, makes it all the more probable that by increasing the amount of carbon and ammonia in the air beneficial results would follow, for the decomposition of such elements by plants is dependant on the degree of light to which they are exposed. It may be fairly allowed that it is most desirable that we should give the matter a fair trial in a systematic way. The practicals are, however, somewhat open to the charge of fixing prejudice at the garden gate like a flaming sword ready to decapitate the very shadow of any innovation which may seek to find an entrance; but it is possible to do homage to the god of science all the while; for why those continual syringings with soot water, and the preference to soft rain water to that which we draw from the bowels of the earth? Because the former is found to have a healthful influence on vegetation wherever it is applied, and the latter agrees much better with most plants than hard water from the well. Now, in both these cases science tells us that the water is largely charged with ammonia, in the one case from the soot, and in the other by the raindrops from the atmosphere in their descent from the clouds.

But the matter that I want to point to as being chiefly involved in the chemical composition of the atmosphere of hothouses is the incessant war which we find it necessary to wage against the insect tribe all the year round, and which is becoming of the greater importance from the ever-increasing amount of fruit and flowers that are cultivated under glass. There are, for instance, thrips, and bugs, and spiders, besides their numerous allies, enough at times to drive one crazy. Anything that would prevent their appearance or destroy them when they appear, would be worth something if discovered, and whoever might be the fortunate discoverer he would deserve a rich reward, and an enduring monument from all who are engaged in gardening pursuits.

Closing with the fact which I have already referred to regarding the comparative freedom from some of our most troublesome and destructive insects, when plants are grown under the influence of the gases with which fermenting manures charge the atmosphere, I would urge the trial of an imitation of such an atmosphere in the forcing-pits and houses of the present day. Whether the freedom from insects arises from such gases being unfavourable to the production of insects, or from the state of vegetation under such circumstances, matters not in a practical point of view. And while it would not be at all desirable to return to the dung-bed and lining in a general way, it is certainly worth while to try and produce the wholesome atmosphere peculiar to that old appliance by some artificial means. I have used guano in the case and manner already referred to, and, as I am warranted in thinking, with success; and it would be interesting if others would give any experience which they have had in the matter, or if they have not tried it to do so, and favour us with the results. The destruction, or still better, the prevention of red spider in our hothouses, is one of those questions which ranks of first-rate importance, and in my case I have never found the application of sulphur to the pipes effective, and the use of the syringe to such fruits as Grapes is attended with nearly as many evils as the raids of the vermin themselves.

D. THOMSON.

ROYAL ASHLEAVED KIDNEY POTATO.—We have received a few of the Ashleaved Kidney Potato from Mr. Rivers, of Sawbridgeworth, and found them when cooked a mass of flour. The flavour is excellent; and with the earliness and prolificacy which it is said to have we do not know any merit it ought to possess which it has not.

GIVE US BACK OUR FLOWER-BORDERS.

QUEEN FLORA.—“Where, gardener, are my loved plants
Which once adorned your borders and mine too!”
GARDENER.—“Your Majesty has but to look and see
Our borders rich with red Geraniums bright, and—”
FLORA (in great wrath).—“Churl! these are bedding plants!”

New Play.

I HAVE spoken of King Croquet as being likely to cause improvement in our small gardens. I own I am old-fashioned—some may perily say “antediluvian” in my ideas; perhaps a residence at Hampton Court, and daily walks in its stately gardens; when an enthusiastic youth, have something to do with my gardening notions. Twenty years ago how I loved to glide along the Thames, and peer into the dear old gardens at Twickenham! How I “suspended the dashing oar” to look into the gardens of Pope’s Villa, and almost worshipped an old Cedar, somewhere, if my memory serves me, at the back of the villa!

Perhaps this early love, to say nothing of older times, when playing in petticoat trim in gardens of relations long since gone to their last home, has something to do with my love for the old-fashioned border plants, and makes me raise my voice on their behalf.

But let us look at the subject in its various bearings—let us turn it over, now this way, now that way. To begin with: there is to me a great charm in the regularity, generally to a few days, at which our old plants make their appearance—their flowering, I mean—in their old places, so that we constantly connect circumstances in our families with their blooming. Thus, not only with poor Thomas Hood do we mark an event as having happened “in the time of Roses,” but when such and such a flower was in bloom. We say, “Ah, dear! so and so was with us last year when the Erica carnea was in flower.” This regularity of blooming as to time did not escape the eye of Thomson, who thus sweetly sings,—

“Along these blushing borders, bright with dew,
And in yon mingled wilderness of flowers,
Fair-handed Spring unbosoms every grace,
Throws out the Snowdrop and the Crocus first;
The Daisy, Primrose, Violet darkly blue,
And Polyanthus of unnumbered dyes;
The yellow Wallflower, stained with iron brown,
And laviah Stock that scents the garden round;
From the soft wing of vernal breezes shed,
Anemones; Auriculas, enriched
With shining meal o’er all their velvet leaves;
And full Ranunculus of glowing red.
Then comes the Tulip race, where Beauty plays
Her idle freaks; from family diffused
To family, as flies the father-dust,
The varied colours run; and, while they break
On the charmed eye, th’ exulting florist marks,
With secret pride, the wonders of his hand.
No gradual bloom is wanting; from the bud,
First-born of Spring, to Summer’s musky tribes;
Nor Hyacinths, of purest virgin white,
Low bent, and blushing inward; nor Jonquills,
Of potent fragrance; nor Narcissus fair,
Nor broad Carnations, nor gay-spotted Pinks;
Nor, showered from every bush, the Damask Rose.
Infinite numbers, delicacies, smells,
With hues on hues expression cannot paint,
The breath of Nature, and her endless bloom.”

This is indeed a delicious flower-picture. We see—we almost smell—the glorious flowers. In fact a well-kept border, in addition to its other excellencies, is a floral almanac.

Then, too, it pleases my mind to think and wonder how long it took our forefathers to collect and arrange their flowers, called some from wood, some from water’s brim; then how gradually they learned from experience that such a flower would bloom in February, such another in March, and so on; and how they must have watched to see if these rules held good year by year.

We force our flowers. Well, be it so. A flower in one sense can never be out of season; but still Nature reigns supreme, for no forced flower is equal to one of the same kind coming “in its due season.”

But, again, who that loves a garden does not love a flower (I mean an individual plant), almost like a living personal friend? On revisiting the home of my boyhood in the flat fens of Cambridgeshire I rushed to see if my old Mezereon tree was yet living. It was gone; but I did find some of my old Rose bushes, Moss, Cabbage, and Maiden’s Blush. Nothing like Roses on their own roots: ye votaries of the budding-knife, hear and heed!

I repeat, we dearly love our old flower plants, but bedding plants live as a rule—at least we keep them, but one year, then the cutting takes the place of the old plant, and other cuttings succeed in other years. Now, my good friend whose garden border I feebly described in "King Croquet," often points to flowering plants with such remarks as these, "That was given me by a poor fellow now in Australia; that by a lad I nursed in a long illness."

Many of your readers doubtless live in parts of England destitute, like this fen country, of great natural beauties, but

"Need no show of mountain hoary,
Winding shore or deepening glen,
Where the landscape in its glory
Teaches truth to wandering men.
Give live hearts but earth and sky,
And some flowers to bloom and die."

(All the better if they do not die for many years.)

"Homely scenes and simple views
Lowly thoughts may best infuse."

I remember a dear old lady in Scotland, far on towards eighty years of age, who—God in mercy having spared her eyesight—used to sit and work at a little table, which always had upon it pots containing common, I mean by that not rare, flowers. Upon my noticing this circumstance to her she said, "Ah! everything has changed since I was a girl, except my flowers; that is why I have them so near me, for they are my oldest friends, so I give them the place of honour."

Supposing this Geranium fever lasts for many more years, our old border plants will become as rare with us as small birds are in France. Something like it has already begun, for I have been served in this way: "Can you tell me the name of this plant?" said I to a young and well-educated gardener. I received for answer, "Really, sir, I do not know. We gardeners have, as you know, done away with border plants, and do not cultivate them anywhere. An old woman in a cottage can best tell you the name."

This, to say the least, is unfortunate, for Flora ought not to lose one gem from her glorious crown. God has given us leaf and flower, various forms of leaf and shades of flower—as much of beauty in the one as the other. What a pleasure there is in raising with hand or outstretched walking-cane some little lovely border flower nestling in its leafy bed, and turning its bright head upwards to be admired! We must not think that all floral beauty, though indeed there is much, resides in glowing masses of rich hues, which we have to perfection in beds; and I think we should not allow our borders to be given to the same tribe. But, unfortunately, of late years the gay crew have in too many gardens dismissed with drooping heads, but never with ignominy—that would be impossible—the charming old border plants.—WILTSHIRE RECTOR.

GLADIOLUS FAILURES.

I RESIDE within a short distance of three nurseries, all of which grow large quantities of Gladiolus, that the public may see them in bloom and make their own selections in purchasing, their's being newly imported or well-ripened bulbs. The flowers are splendid, and cannot fail to enamour all who admire beautiful flowers: consequently bulbs are ordered to be delivered when at rest. I received a visit from one of the above nurserymen on the 20th of September just past, and was invited to see his beautiful display of Gladiolus. Accordingly I went over and took my better half to enjoy the pleasing sight; and, on arrival at the place, seeing no one present to show us the sight, we strolled on until we came to a large patch of Gladiolus, but which were evidently not intended to have been seen by us, for, while we were commenting on them, the proprietor arrived to escort us elsewhere. In answer to my question why all those Gladiolus were so late (as evidently not one could flower this season, the spikes being not half developed), he replied these were bulbs left unsold, and only planted at the end of June or early in July. I, therefore, beg to ask you and other growers through your Journal, if these bulbs can be planted and matured sufficiently to bloom satisfactorily in any ordinary grower? My experience leads me to

dozen of last-spring's-purchased bulbs of Gladiolus chiefly through this cause alone. If nurserymen are determined to have the first blooms after importing the bulbs, and sell these mixed with all their half-ripened ones, need there be any wonder at the disappointment and complaint you so frequently hear of and publish?—T.

SPRING GARDENING.

AMONGST the most ordinary objections made to the present fashionable system of bedding-out, there is not one more frequently brought forward than that it leaves the gardens bare for a large portion of the year, and that persons sacrifice the appearance for nine months in the year for the brilliant display of barely three; and many persons, it is to be lamented, seem to resign themselves to this condition as if it were hopeless to attempt a remedy. Assuredly such a state of things need not be the case, and this conviction arises both from personal experience and from observation of the manner in which the difficulty is met on the continent—for "they manage these things better in France." A few hints as to the best method of meeting the difficulty may not be unacceptable.

There are two classes of plants by which this object can be effected—bulbs and annuals, the main dependence being placed on the former; and considering the extensive area over which, owing to modern horticulture and skill, we are enabled to travel, there is really no difficulty in having one's garden gay from the earliest spring months, at a comparatively trifling expense. We do not, of course, mean that the garden will present at any one time such a blaze as when Verbenas, Geraniums, &c., are all in full force together; but a very nice display may be made by having a succession in which the various species of bulbs will play an important part. There is, it is to be remembered, one great advantage in this tribe of plants—that their bloom is almost certain. The Tulip, Crocus, Hyacinth, &c., have their flowers already formed in the bulb, and it will only require the most ordinary care to develop them in full perfection; whilst in other things the seed has to be sown, or the cuttings made, and "many a slip between the cup and the lip" may take place before the bed is thoroughly in bloom. And, again, they have the advantage that as soon as the bloom is over they may be taken up, removed to a spare place in the kitchen garden, and there allowed to mature themselves, and be ready for the following spring, while the vacant spaces may be immediately filled in with the bedding plants.

So much has been said on the subject of pot-culture and window-gardening, and such copious directions are given with the various articles in the catalogues published by the leading firms, that I shall confine myself to the flower garden, and endeavour to show how the space occupied by bedding plants in summer may be managed in spring. I would, then, advise that where beds are bordered with either the white Alyssum or Cerastium that this be done in the autumn, the plants be taken up, divided, and replanted. By this means a neat border will be given to the beds; for as these plants are perfectly hardy they will not suffer from the severity of the winter.

In some of the beds the Crocus may be used for the earliest bloom, a good broad border of it being, I think, the most effective way in which it can be employed; for if the bed is made to depend upon Crocuses entirely, their long foliage, when they have done blooming, is apt to make it look untidy. Many fine varieties of Crocus may be had for this purpose, while brilliant yellow, blue, and white will really be the most desirable for contrast. No one could think of dispensing with the little Snowdrop; and when to these we add the beautiful brilliant blue Scilla sibirica, we have named the most beautiful and useful of the early-flowering spring bulbs. To these succeed the Hyacinth, Tulip, Ranunculus, Anemone, Narcissus, &c. The Hyacinth, it will be remembered, as well as the Ranunculus and Anemone, are dwarf, and should occupy places corresponding. No one need be old of the great beauty and fragrance of this lovely spring flower, and I would, therefore, advise that it be extensively used. Here named selections would be out of place; excellent bulbs in distinct colours can be procured of all the gardeners, and they may be used according to taste. But

the bulb in which most reliance may be placed is the early Tulip, and we greatly wonder that it has not received more attention. The beautiful dwarf Van Thols, the gorgeous Duchesse de Parma, Vermilion Brilliant, Garibaldi, &c., make an appearance which when once seen will be ever afterwards appreciated. And let it not be thought that this involves a vast expenditure; an assortment of both expensive and cheap varieties is always to be found, so that according to the wishes of the amateurs they can be supplied.

The centre of the parterre should be devoted to the taller-growing varieties of Tulips, shaded-off according to their colour, and arranged as to their height, the Van Thols being the lowest-growing. The arrangement must so much depend on the form of the beds, the extent of the ground, and the taste of the owner, that no detailed directions can well be given. Where there is a shrubbery in the background I would suggest a row of *Dielytra spectabilis* as forming a most beautiful finish; while, in order to give a more lengthened period of bloom to the beds, plants of the common Forget-me-not and *Silene* may be planted in them; and when the bulb-bloom is over, as of Hyacinths and Van Thol Tulips, the stems may be cut down nearly to the ground, and all may be cleared away together in the middle of June. In fact, the combinations are endless, and the hints that I have thrown out will, I hope, be sufficient to induce amateurs to be no longer contented with empty beds in spring. In the gardens of the Champs Elysées and Parc de Monceaux, where, let it be remembered, the winters are as cold as ours, if not colder, I saw in May many beds of annuals in full bloom. The attempt at the same effect in the Royal Horticultural Society's Gardens was not a very happy one; but when once put into the right track I have no doubt that the good taste and zeal of our great army of amateur horticulturists will make the spring garden as much a point of interest as the summer one.—D., Deal.

"WHAT CONSTITUTES HIGH CULTURE IN EPIPHYTAL ORCHIDS?"

[To the above somewhat vague query sent by a correspondent signing his letter "ORCHIDOPHILUS," Mr. Appleby has sent us the following reply.]

To describe the dimensions of any plant or tree so as to give the reader a correct idea of its size, is not an easy task without drawings. An instance occurs to my mind: We are told that the *Wellingtonia gigantea*, a tree found in California, grows to the enormous height of 300 feet, and is 27 feet in diameter. Now, to any one unaccustomed to measuring timber, such numbers give no definite idea of the immense magnitude of such a truly magnificent tree; but by comparison or some other mode we can give to the most ignorant person a tolerable idea of its great size. I will try one way of doing this. The diameter is 27 feet.—Now, suppose there are four men 6 feet high each; place one on the ground and another on the top of the first, a third on the second, and a fourth on the third, the four will then reach to an altitude of 24 feet. Then place a boy 3 feet high on the head of the last, and then the diameter of the tree would be equalled. Next measure a hundred yards in a straight line, and set up a stake at each end—that would show the length the tree would reach if it were felled. Further: Supposing it were necessary to cover such a felled tree, it would require a building 100 yards in length and 9 yards in height to contain it.

"ORCHIDOPHILUS" desires to know the dimensions of the largest pseudo-bulbs of *Calanthe vestita* grown by my friend Mr. A. North, at the Lodge, Ashton-upon-Mersey. In order to be able to give the correct size, I was at the pains to go there to measure them. It happened to be at the time when they were at rest, consequently they could be more easily measured. I took a piece of tape and passed it round one of the bulbs. It measured exactly 14 inches. That was lengthwise. I then put the tape around the bulb in the thickest part, and found that to be 9 inches. Now, let "ORCHIDOPHILUS" or any other grower take one of their pseudo-bulbs of this fine Orchid, and compare by measurement the size of that bulb and note the difference. They were at least one-third larger than those "ORCHIDOPHILUS" alludes to which I mentioned in my "Manual of Orchid Culture," a

book which I am glad that he has found useful, and I trust he will eventually succeed in obtaining pseudo-bulbs quite as large as described above.

His next inquiry is, "What constitutes high culture in epiphytall Orchids?"

As example is better than precept, I would advise him and other young growers of these singular and most interesting plants, to visit the most celebrated collections at several seasons of the year, and observe the state and perfection to which, by high culture they have been brought. I would particularly recommend an inspection and study in a cultural point of view of the large collection at Messrs. Veitch's Royal Exotic Nursery, at Chelsea. There may be seen plants of Orchids grown as they should be, and in such numbers of even the rarest species as would astonish a small grower, though at such places it is hardly fair to expect to see the finest specimens or examples, because Messrs. Veitch and other nurserymen grow their plants for sale, and whoever will give the price for the finest specimens can have them; but one thing is certain, that every grower for sale exerts his utmost skill to bring them to the highest state of cultural perfection. Useful lessons in culture may be obtained at other nurseries, such, for instance, as Mr. Williams's, at Holloway; Messrs. Rolliason's, at Tooting; Mr. Maule's, at Bristol; Mr. Woolley's, at Cheshunt; and others.

It is, however, in private collections that examples of what constitutes high culture may be best observed. I am glad to notice that these examples are increasing, and I hope "ORCHIDOPHILUS" himself will be one of the number. I will mention only the following—namely, Mr. Rucker, at Wandsworth; the Bishop of Winchester, at Farnham; Mr. Aspinwall Turner, near Manchester; the Duke of Devonshire, at Chatsworth; Mr. Horatio Nicholls, near Bowden, Cheshire; and Mr. Reed, near Bridgwater. At these and, no doubt, many other places, fine examples of the high culture of Orchids may be studied with great advantage by new beginners of Orchid-growing. I may, however, mention, that well-grown plants of this tribe should be perfectly healthy, and every succeeding pseudo-bulb should be annually larger, with leaves of increased size, till the maximum is reached. The Indian species, such as *Arides*, *Saccolabium*, and *Vandas*, should be strong and robust in health, with leaves of a full green colour without spot or blemish; and each plant, where it is the habit to be so, should have many shoots all equally strong and healthy. Plants so grown would be in a state of high culture.

Our correspondent next states that he has seen a collection of Orchids that had been neglected, showing a regular degeneration, and he wishes to know the cause and the remedy. As to the cause, it must necessarily be in a great measure guess work.

Plants in such a state as he describes must either have been grossly neglected or managed by a person almost totally unacquainted with their culture, or, perhaps, possessing inadequate means to grow them—with such, for instance, as insufficient heat and moisture in the air, improper soils, or an indifferent house to grow them in; or, lastly, his time may have been taken up with other departments of gardening, so that he could not devote sufficient attention to this class of plants.

To bring such plants back to a state of normal luxuriance would require the reverse of the treatment they have been subjected to. The first point to attend to would be to improve or rebuild the house or houses they are to grow in. See that there are plenty of pipes to heat the atmosphere, and means devised to give out moisture during the growing season. Air must be given when needed, and that air should pass over the pipes, so as to be heated before it reaches the plants. Then procure the necessary requisites of fibry peat, sphagnum moss, charcoal, cocoa-nut fibre, fibry loam, leaf mould, and caky dung. All these are necessary where a tolerable collection is to be grown or brought into renewed health. Also have clean pots, good sound logs and baskets, and plenty of broken pots of at least three sizes. All these being obtained, take the deteriorated plants, shake them out of the old soil, wash them thoroughly in tepid water so as not to leave one insect, and then cut away all dead or decayed roots and dead pseudo-bulbs. Do this at a time when the plants are not growing. Then repot, rebasket,

and relog the whole, and place them in the sweet clean house, giving no water till shoots and roots appear; only give moisture in the air pretty freely, to keep them plump, and encourage them to grow both at the top and the roots. The cultivator must not expect such a neglected collection to improve even with the highest culture in a short time—it will take three or four years to bring them into normal luxuriance. If he has not had much experience, let me advise him to procure some work on their culture: even the humble one our correspondent alludes to will be useful.—T. APPELEY.

CENTAUREA CANDIDISSIMA AS A BEDDER.

As there seems to be some difference of opinion about the merits of this plant for bedding purposes, it would be of great service to the gardening world if those who have had much experience of it would report upon the subject. My own has not been sufficiently extensive to enable me to give an opinion without some reservation; but others, perhaps, can write more decidedly. What little experience I have had is greatly in its favour, and the condition of my plants during the greater part of the summer left nothing to wish for. Some growers, however, say that it becomes too rank, and when so its foliage assumes a dirty grey instead of the beautiful white which it in general presents. Are its detractors right or not? I fancy myself that the majority of those who grow it will affirm the contrary, but if otherwise let them by all means be heard.—H. T. V.

[We shall be obliged by reports on this subject, whether success or non-success attended the attempt to bed this plant, with details of the culture adopted, and the nature of the soil.]

HERBACEOUS CALCEOLARIAS.

"AN ADMIRER OF CALCEOLARIAS" wishing for hints on their cultivation, will, it is to be hoped, find something in the following suitable to his case. These charming plants are natives of the mountain ranges of Chili and adjacent countries, and delight in the rich vegetable mould found on the margin of forests, the same as the Foxglove, to which they are closely allied, does in our own country.

Calceolarias may be had in bloom at different periods by periodical sowings of the seed, but three sowings will be ample for most places. For a spring display, the seed is sown in the middle of July; for summer flowering, in the last week in August; and a sowing in spring gives fine autumn-flowering plants. The two first sowings require no artificial heat, but the last is placed in heat.

Seed of first-class excellence should be procured, avoid low-priced seed, and by all means let it be new. The starting into flower prematurely is greatly to be attributed to old seed, whilst vigorous growth is promoted by sowing new. The soil for the sowing should consist of turfy loam and leaf mould in equal parts, with an admixture of one-sixth silver sand. The seed-pan or pot should be half filled with drainage, and on this place the riddings of the compost, for it should pass through a half-inch riddle. Providing the drainage and riddings occupy three parts of the depth of the pot, fill with the compost, and level the surface. Water, so as to thoroughly moisten the soil, through a fine-rosed watering-pot; sow the seed thinly upon the surface, and scatter a little silver sand over it so as to make the surface of the soil white all over. Place the pot in a shady place out-doors, and cover with a hand or bell-glass, or a close cold frame will answer as well. Guard against exposing the pot to sun and currents of air, and keep the soil just moist, but not very wet. Look out every now and then for mites, for these pests will clear a pot of seedlings in a single night and leave nothing behind them but their slime and the roots beneath the surface. A little soot sprinkled round the pot will make all safe in that respect, and may save the raiser the trouble of complaining about the badness of the seed. All watering should be made through a fine-rosed watering-pot, and shade must be given to the place in which the pot stands.

When the plants are fairly up, and a little root and shoot visible, gently remove the hand or bell-glass, and place the pot in a shady place out-doors, and cover with a hand or bell-glass, or a close cold frame will answer as well. Guard against exposing the pot to sun and currents of air, and keep the soil just moist, but not very wet. Look out every now and then for mites, for these pests will clear a pot of seedlings in a single night and leave nothing behind them but their slime and the roots beneath the surface. A little soot sprinkled round the pot will make all safe in that respect, and may save the raiser the trouble of complaining about the badness of the seed. All watering should be made through a fine-rosed watering-pot, and shade must be given to the place in which the pot stands.

plants have a pair of rough leaves the size of the thumb-nail, pot them singly into 60-sized pots in the same compost as before, and place in a close cold frame in a shady spot. Keep close and shaded for a few days until growth commences; then admit a little fresh air, and give enough water to keep them growing freely. When the plants become established admit air freely by taking the lights off at night, and in cloudy weather, and thus give them the full benefit of dews, gentle rains, and a damp but not stagnant atmosphere. Dryness is the greatest bane to contend against in Calceolaria-culture, for if the plants are kept dry green fly is difficult to keep down, and they flower prematurely. For that reason the lights had better be kept over the plants during the day and the frame tilted or stood on bricks placed flat-wise at each corner, so as to prevent stagnant air lodging, or the frame becoming hot inside. A gentle sprinkling of water overhead morning and evening in droughty weather will much invigorate the plants; but they should be shielded from heavy rains by putting on the lights, and shaded from bright sun.

The plants must be potted immediately on the pots becoming filled with roots, for cramping them in small pots tends to cause flowering before the plants are half formed. Shift them into 48-sized pots, using the same compost as before, placing in the frame, &c., as at the first potting. When the roots reach the sides of the pots, pot into 32's, using a compost of loam from rotted turves one year old and leaf mould in equal parts, with half the bulk of cow-dung two years old, and add about quarter of the whole of pieces of charcoal the size of a hazel nut, and silver sand. Water freely in addition to lightly syringing morning and evening, admit abundance of air, and give all the light practicable without bright sun.

In October (I am dealing with the seeds sown in July for blooming in May) the plants will need shifting into 24-pots; but as there will be some very strong whilst others lag behind, discriminate between a strong plant and a weak, potting the first, but merely examining the last to see that the drainage is all right; then place in a cold frame with a southern aspect, for we now want light and warmth.

Any plants that are very sickly ought to be shaken out of the pots, removing all the earth without injuring the roots, and potted in the compost recommended for seedlings in a size very little larger than just sufficient to hold the roots without cramping them. If the cultivator's stock be large he may discard the sickly plants; but it is only right to caution the uninitiated against throwing away that which may prove superior in colour, spotting and blotching, form and substance, to any in the patch. I have known the sickly-looking considered so; but really weak growers afford the most novelty, and the finest-formed and coloured flowers in patches of seedlings. These weak growers, whether weak by nature or accident, will form capital succession plants, and first-class specimens of small size for filling up gaps on front stages in the conservatory. When the nights are becoming frosty in October or November remove the plants to a pit, placing them near the glass, and as far from the heating apparatus and currents of dry air as possible without subjecting them to frost or allowing stagnant air to lodge near them. The plants cannot have too much light and air; but care should be taken that the air does not become dry, nor that they flag from want of water at the roots or a deficiency of moisture in the atmosphere. Damp or stagnant air should be studiously avoided, and drip prevented falling on the leaves, or moisture of any kind lodging between the leaves or on them for any length of time. The shelves of a greenhouse are a good place for wintering Calceolarias, but not equal to a pit, though I have had them in 12-inch pots with a head of bloom between 2 and 3 feet in diameter with over a thousand flowers upon them at one time. The main points to attend to during winter are to keep the plants gently growing without giving warmth to make them grow quickly, and, if dark and close, to become drawn and tissue-like in the leaf. Any shoots that grow straggling should be stopped; but it is a bad practice to stop one shoot and not another on the same plant, for it tends to promote a succession of flowers; whereas the beauty of the plant consists in all the blooming-stems appearing simultaneously.

If all go on well the plants will have leaves the size of the thumb-nail, pot them singly into 60-sized pots in the same compost as before, and place in a close cold frame in a shady spot.

18-sized pots and gently bedewed with tepid water in the morning, care being taken to have the leaves dry before the sun goes down, for water left standing on the foliage is apt to cause that part of the leaf where it rests to damp or decay. Water must be given more liberally as the days lengthen, but it is well to let the plants need it before affording a supply. A little now and then does no good, but an occasional thorough application, enough to run through the pot and so wet the soil quite through, is worth all the surface-waterings put together. No watering is necessary before the soil becomes dry, but not so much so as to make the leaves flag. Water should be given before that takes place.

By the latter part of February or beginning of March the pots will be full of roots, when the plants must be shifted into pots a size larger or into 12's, using the soil a little rougher, chopping instead of sifting it. The plants will now require syringing morning and evening; in about three weeks from this time the pots will be again full of roots, when the cultivator should consider whether he would like the plants to bloom in the pots they are already in, or if he would like them a little larger and finer. The strongest will be chosen and potted into 6-sized pots, giving extra drainage, and using the soil rough. The pots will soon be full of roots, and when these begin matting round the sides of the pot the flower-stems appear. At this stage keep a good circulation of air and the atmosphere of the house moderately cool, without shading, and so induce the flower-stems to rise strong and dwarf, and if so, no sticks will be needed to support the massive heads. I never attend an exhibition without being puzzled to know whether it is the number of sticks and ties that win their owner the prize, or the distorted blooms on their lanky stems. The plants are to be lightly syringed morning and evening until the flowers burst the calyx, when moisture must be given by sprinkling the paths and shelves occasionally.

When the blooms have attained half their full size, they should be shaded from very bright sun, and when fully developed, their beauty is much prolonged by being shaded from ten to four o'clock. It is not necessary to repot so often, to give more than one shift in the spring, nor to attend to one-half the minutiae here laid down, but I have given the essential particulars of their cultivation, the nearer to which the grower adheres the more likely is success to attend his efforts. The drainage in all cases of repotting should be perfect, and this is secured by placing a large crock on the hole in the pot, an inch of rough crocks, half an inch of finer, and a layer of live sphagnum, or cocoa-nut fibre half an inch thick upon that. It is not a bad practice to pot rather low, especially if few shifts are given, for then the pots can be top-dressed, for the *Calceolaria* emits roots from the stem, and these are preserved and extended by the top-dressing, which promotes healthfulness and vigour. Plants that are not shifted repeatedly until the flower-stems appear, will be much benefited by the application of weak liquid manure twice a-week.

Plants done blooming are to be plunged in coal ashes in a shady place, but exposed to the air. All the flower-stems having been removed, fill in the openings between the plants with leaf mould, putting it close to the stems. Into this the young shoots will root, and when they are sufficiently advanced slip them off the parent, and insert them in 48-sized pots in the compost recommended for seedlings. Place in a cold frame, and keep shaded until well rooted, when they may be treated as seedlings of the same season, or like July seedlings. The established or old plants are to be potted in the last week in August in pots sufficiently large to contain them, without cramping them, after the removal of all the old soil that comes freely away without injuring the roots; then place in a cold frame that they may recover the disrooting, when they require the same shifting and treatment as seedling plants.

The seedlings sown in the autumn must be potted when large enough, and they may be wintered in 48-sized pots on shelves near the glass in the greenhouse. They will require potting in March, and shifting into their blooming-pots in the end of April or beginning of May.

Spring-sown plants are raised in heat, care being taken to keep the atmosphere moist and healthy, yet free from draughts. When of sufficient size they are potted-off, and

gradually hardened-off, as with half-hardy annuals, by the middle of May. The seed, to do this, should be sown in the first week in March: the plants are then placed in a cool frame, and shaded from scorching sun, which is apt to cause the flower-stems to come whilst the plants are small. Shade and moisture, with repotting as often as the pots become filled with roots, will keep the plants growing vigorously until the last week in July, when they must be potted into their blooming-pots, giving them the full benefit of the sun's rays, and sprinkling them lightly morning and evening with water until the flowers appear, when they may be removed to a drier atmosphere to bloom. Such plants, however, are seldom half so fine as those kept over the winter; but if not allowed to produce many flowers in autumn, and kept over the winter, and frequently repotted, they make very fine early-flowering plants, and afford in the April and May following a display which no occupant of the greenhouse, not excepting the *Azalea* and *Cineraria*, can rival.

Green fly is very troublesome in attacking the *Calceolaria*, and is mostly brought on by keeping the plants in a close confined atmosphere, and by imperfect drainage. A sour soil also induces the attacks of this pest and of mildew; whilst a too dry atmosphere is instrumental in bringing on thrips. The plants should be smoked with tobacco on the first appearance of green fly and thrips, but the leaves should be dry; and it is better to smoke slightly two nights consecutively than give a strong dose on one night that not only kills these pests but injures the leaves as well. Mildew may be removed by dusting the infested parts with flowers of sulphur; and damp may be prevented by removing the causes—stagnant atmospheric moisture, and water lodging on the stems and leaves.

Shrubby *Calceolarias* must form the subject of another communication.—GEORGE ABBEY.

BILLBERGIAS AND THEIR CULTIVATION— ÆCHMEAS.

It but too often happens that this valuable genus, though represented in almost every stove we visit, receives but secondary consideration and treatment. This is undeserved considering its known merits, its singular foliage, and the brightness and uses of its flowers. Such treatment may often arise from the simple supposition that the plants grow and seem to flourish well under the roughest system of treatment. That these ideas are wrong I scarcely need state, or that such treatment does very poor justice to this or, indeed, any other class of plants, for by cultivation they may be induced to form much finer foliage and to flower much more freely than they usually do.

The general system of treatment I would follow would be to pot them each year, in May, in a compost of peat, sand, and charcoal, adding a few well-broken potsherds; to afford them but a slight shift each time, taking care to pot them firmly; and to give them up to September a general stove temperature and treatment. It is also necessary to bear in mind that where good drainage is afforded they are fond of an abundant supply of water during their growing season. At the first opportunity after September they should be placed in a higher temperature and receive the general treatment of a Pine plant when the object is to induce it to fruit. I have omitted to state that all growths remaining upon the plants which may have previously flowered, or may be older than those of the last year, should be carefully removed with a keen-edged knife, for by permitting these to remain upon the plants they appropriate to themselves a part of the sap, all of which should go towards the perfecting of a large strong growth, with a view to efficient flowering. In some of the varieties the flower-spikes push out rather too far to sustain their weight, and in such case they may be properly secured by being tied. Others which are not so long and are stronger in the stem will require no support.

The sorts generally known are *Billbergia Leopoldi*, *amœna*, *fasciata*, and *Duc de Croy*. I have known some very lively-flowered sorts under the names of *Morelliana* and *Liboniana*, though, in consequence of greater notice not having been taken of them, the collection is not so complete in some popular catalogues as it might otherwise be.

ÆCHMFA is another very pleasing genus, and very closely

affixed to the preceding in its form, habits, and mode of flowering. The remarks given above will serve generally for the successful cultivation of these also, though perhaps our favourite, *Æchmea fulgens*, will by a distinct treatment submit to our wishes more readily than any of the others. The way this is now generally treated is the following:—Take off with a sharp knife any young shoots about three parts grown, place them upon the tan in a Pine-pit, or on the soil in a Cucumber-house, or in any other place where a high moist temperature is kept up, where they will eventually root. When rooted the cuttings should be carefully potted into 48-pots in a composition similar to that detailed for *Billbergias*, but with rather more sand, potsherds, and drainage. Continue to keep them in a warm moist atmosphere until you suppose they are well established or are showing for flower. They come quickly into flower when permitted to remain in heat; yet when we wish to retard their period of flowering, it does not injure them to remove them into a lower temperature for a time.

Besides this, other modes of obtaining a succession of flowering plants might be practised, such as taking off the cuttings at twice, the strongest first, or by removing half or so from the higher temperature when the young plants have become established, and when they show any signs of flowering to return them into heat as required. Grown thus they are exceedingly useful for drawing-room or other decorations, lasting a long period in flower. They are very effective when tastefully arranged in a stand with some of our more graceful Ferns.

Of the kinds I like *fulgens* best, though the beautiful and evenly balanced markings upon *discolor* constitute it a very pleasing object. Besides these there are *Milnioni*, *spectabilis*, and *miniata*. They should have all the sun and light possible.—WILLIAM EARLEY.

THE ARRANGEMENT OF COLOURS IN THE FLOWER GARDENS AT APLEY TOWERS, RYDE.

WHERE flower-gardening is carried on to any extent and carried on with spirit I think it adds very greatly to the general effect, and gives a varied charm and interest to the whole when the system of arranging the colours is varied as much as possible in the different gardens or divisions into which the pleasure grounds and flower gardens may be divided. By way of illustrating more plainly what I mean, I will as briefly as possible give a short outline how I have had them arranged here this season.

I think it gives additional interest to the pleasure grounds to have the flower borders and beds altered in their arrangements each succeeding season as much as can be done, so that the family and visitors may not have the same arrangement often repeated in the same place, however pleasing and attractive it may be in the general effect.

The mansion here stands upon the top of a piece of ground gently rising from the west, north, and north-east, and these three sides are open—that is, free from trees, while the rest is pretty well closed in with large trees and shrubs. On the east, north, and west are the flower gardens, and nearly all are seen from the windows. On the three sides of the mansion, as stated above, grass extends for several yards; then comes the terrace walk, and beyond it there is grass to the top of the terrace bank, which gently slopes for 9 feet. On the east side, and level with the terrace walk, is a flower garden in grass having the beds all of one colour, excepting a small edging of a different colour to contrast with the bed as much as the means at command will allow. Forming part of this garden is a set of smaller beds, all filled with *Verbenas* of one colour, and each bed differing from the one adjoining to it. This composes the flower garden on the east side of the house.

The flower garden on the north side lies beyond the slope of the terrace bank—it is a polychrome garden having a walk running round it, and joining the terrace walk by a flight of steps. Here each bed has been confined to two colours—that is, the bed is filled with one colour, excepting an edging of another contrasting colour. This garden is

The first garden on the west front is on the same level below the terrace as the one just described as being on the north side. It forms half a circle, having its base towards the house and terrace bank. It is likewise a polychrome, but quite different in design and execution; its principal feature being a centre of grass, on which is a pedestal surmounted with the figures of two boys contending for some fruit, and from this centre radiate the principal walks. This garden like the north one is surrounded with a walk, and the base is connected with the terrace walk by a flight of steps. On the top of the balustrades are two boys in bronze, apparently requiring all their strength to hold and restrain a struggling fish.

The bottom of the balustrades is ornamented with vases full of *Geraniums*, and the sides of the flight of steps to the north flower garden are also ornamented with vases filled in a similar manner.

The colours in the beds in this, the west, polychrome garden are more in the ribbon style—that is, there are three colours, the centre being a good contrasting colour, each side of another colour, and the margin of a different hue. These beds fall from the centre east and west. They are flanked with four small round beds, each of one colour, two on each side. Each pair of these round beds is divided by a longer irregular bed filled with one colour, the same as the corresponding bed on the opposite side.

Beyond this flower garden the ground falls again. Another flight of steps, right opposite to and in a line with the flight of steps which connects this garden with the terrace walk, descends to this portion of the grounds, which is by far the largest.

As stated already, the west side of the garden just described forms half a circle, this flight of steps being in its centre. At the bottom of the wall, which is completely covered and hid with *Laurustinus* and *Fuchsia Riccartoni*, which flowers more or less all the summer and autumn, is a flower-border about 12 feet wide and 300 long. This border is planted in the panel style, every 11-feet long forming a square, differing in colour from the one adjoining it; and running along the entire length at the back is a row of the blue *Ageratum*, and next is a row of yellow *Calceolaria*. Each square is divided by three rows of *Calceolarias*, the centre one being *Rugosa*, the two others *Prince of Orange*. Next the grass is a row of *Alyssum variegatum*, next to this is a scarlet *Verbena*, and then *Rugosa Calceolaria*; so that each square has three rows between it and the grass, three rows between each other, and two rows at the back. In the centre of each square stands a plant of *Humea elegans*. This border forms the fourth style of arranging the colours.

Running at nearly right angles from the north end of this border, and passing under large Oak trees, is a serpentine border 76 yards long. It is not everything that will answer well under the shade of trees. This border is well seen from the corner of the terrace walk: hence it is desirable to have it look gay and as trim as possible under the circumstances. It is backed with low shrubs, and we have this season a ribbon of four colours in it. The back row is the blue *Ageratum* staked up; then *Calceolaria latifolia* likewise tied up; next, French Marigold with their varied colours, and the row next the grass is the white variegated *Bahn*.

Fifth arrangement. At about 12 yards in front of this border, but not quite parallel to it, is our principal ribbon-border. This has a gentle curve, backed with shrubs, and is well seen from the terrace walk, which may be from 12 to 16 feet higher. It is 12 feet wide, and is composed of nine colours, the back row being Sweet Peas neatly staked up, then follow the blue *Ageratum*, *Perilla nankinensis*, *Calceolaria rugosa*, *Geraniums Flower of the Day* and *Tom Thumb*, Purple King *Verbena*, *Cerastium tomentosum*, and next to the grass is the bright low-growing *Verbena Array*. The outside of this curved ribbon-border being seen by the promenaders on the terrace walk, the effect is better than were it straight, having one end to the terrace.

Sixth arrangement. A little to the south of this border are a number of large beds filled in their middle with *Rhododendrons*, &c., which, of course, flower early in the season. Each of these beds has amongst the *Rhododendrons* a few *Hollyhocks* and some *Dahlias*, *Lilies* and *Tritoma uvaria* giving variety and extending the season of bloom as long as

in some instances three rows of flower-garden plants. Some have the back row yellow Calceolarias, with Scarlet Geraniums in front; others have the back row Petunias; as they grow they are held back against the Rhododendrons by small stakes, so that by August the plants are growing away amongst and upon the Rhododendrons, and present at a little distance slightly the appearance of a bank of flowers, backed up with Dahlias, &c. This forms the last style here of arranging the plants and colours in the flower gardens, besides mixed borders, which to some minds are a great and a pleasing relief from the more formal styles.—GEORGE DAWSON.

SOME OF THE GARDENS WORTH SEEING.

BEDFORDSHIRE.			
Name.	Proprietor.	Gardener.	Station.
Bromham Hall...	Lord Dymor...	Mr. Thompson.	Llandilo
Woburn Abbey...	Duke of Bedford...	Mr. Mackey...	...
Fatridge Bury...	Col. Sowerby...	Mr. R. Fish...	Luton
Amphill Park...	Lord Wensleydale...	Unknown...	Amphill
Flitwick Manor...	Mrs. Trevor...	Mr. Nutt...	Amphill
Tingrith House...	Miss Trevor...	Unknown...	Woburn
GLAMORGANSHIRE.			
Penrice Castle...	C. R. M. Talbot, Esq., M.P.	Mr. J. Crook...	Swansea
Margam Park...	C. R. M. Talbot, Esq., M.P.	Mr. G. Crook...	Port Talbot
Singleton...	Mrs. Vivian...	Mr. Westcott...	Swansea
Stout Hall...	R. Wood, Esq.	Mr. Owen...	Swansea
Penllergare...	J. D. Llewellyn, Esq.	Mr. Nunn...	Swansea
LEICESTERSHIRE.			
Frith House...	Miss Mackey...	Mr. Bolton...	...
NORTHAMPTONSHIRE.			
Cottesbrook Hall...	H. Langham, Esq.	Mr. Todd...	...
Lampport Hall...	Sir Charles Isham, Bart.	Mr. Todd...	...

ROYAL HORTICULTURAL SOCIETY'S COMMITTEES.—Oct. 6, 1863.

FLORAL COMMITTEE.—A meeting of the above Committee was held this day. A very few entries were made either of plants or flowers, and nothing of any great interest was exhibited.

Messrs. Low sent some new Orchids—*Cattleya irrorata* elegans; *Sophronitis grandiflora*, a fine variety of this species; and *Dendrobium eburneum*, a promising flower, but not in condition, although sufficiently developed to show its qualities. This, being a new variety, was awarded a first-class certificate, and when seen again will doubtless realise all that is expected of it.

Mr. Bull sent four small plants of varieties of scarlet *Pelargoniums*, the plants were merely cuttings. Novelty, a bright cerise well-formed flower being the best; *Petunia Edith*, no improvement on better kinds; and *Pandanus candelabrum*.

Messrs. Smith, Dulwich, sent again four specimens of their hardy herbaceous *Anemone Honorine Jobert*, a very good and useful autumn plant, producing an abundance of white flowers. This plant was commended at a previous meeting, and now received a second-class certificate.

A few seedling Dahlias were sent by Messrs. Bragg, Slough, and Mr. Burgess, but out of condition. A few *Panias* were also sent: these were out of season and very imperfect.

FRUIT COMMITTEE.—J. B. Haig, Esq., in the chair. At this Meeting there were several prizes offered. In Class A, for the best collection of Grapes, there were two entries, the first from Mr. Meredith, of Vine Cottage, Garston, near Liverpool, was a very fine collection, consisting of twenty-one varieties, and grown as Mr. Meredith always grows them. In such a collection we can have only space to notice a few particularly, and of these we could not but admire the bunch of Muscat Hamburg, which was large and well set, and the flavour most delicious. Every season seems to add fresh honour to this most delicious of Grapes. Alicante was large and well set, the bloom on the berries thick and solid-looking. Trentham Black was also fine both in appearance and in flavour. Mr. Meredith showed in this collection a seedling called Garston Seedling. It is an immense bunch, as might have been expected from the cross between Syrian and Muscat of Alexandria. The berries are large, white, and with a fine rich flavour, which in the bunch exhibited was not fully developed, from being as yet rather unripe; but when this Grape is fully ripened we have no

doubt but that it will prove to be the best-flavoured late White Grape yet in cultivation. It surpasses both Trebbiano and Calabrian Raisin in this respect. Mr. Meredith was requested to send it again later in the season. For this collection of Grapes Mr. Meredith received the first prize. The second prize was taken by Messrs. Lane & Son, of Berkhamstead, who also exhibited fine bunches of twenty-three so-called distinct varieties; but as Frankenthal, Black Hamburg, Esperione, and Pope Hamburg were all the same, and Mill Hill and Champion Hamburg were also synonymous, that reduced the number to nineteen. These had all been grown in an orchard-house, and though fine in appearance were infinitely inferior in flavour to those of Mr. Meredith.

In Class B, for the best dish of Cox's Orange Pippin, the successful competitor was Mr. Charles Turner, of Slough. Mr. Rivers, of Sawbridgeworth, also sent specimens of this variety not for competition but comparison, and though they were larger and of a finer colour than Mr. Turner's, they could not approach them in flavour.

In Class C, there were no entries with the exception of Mr. Spivey, whose specimens were not the Golden Reinette.

In Class D, Mr. Spivey, gardener to J. A. Houlton, Esq., of Hallingbury Place, Essex, took first prize with Pine Apple Russet, fine specimens of that variety.

A seedling Grape was sent by Mr. Ross, gardener to C. Eyre, Esq., Welford Park, near Newbury, but it was not sufficiently distinct from Black Hamburg to be considered a different variety.

Messrs. Lucombe, Pince, & Co., of Exeter, exhibited a bunch of Mrs. Pince's Muscat, a Black Grape producing a large, long, well-shouldered bunch with oval berries, the flavour of which is very rich and excellent, and with a distinct Frontignan flavour. This was considered a Grape of first-rate excellence and received a first-class certificate.

Mr. B. S. Williams, of Paradise Nursery, Holloway, sent a splendid bunch of the Royal Vineyard Grape, which received a first-class certificate at the November meeting in 1862. The bunch exhibited on this occasion was much finer than that shown last year, and was about 15 inches long, tapering like that of the Black Prince. The berries were large, quite round, and of a pearly look; the skin is so thin, and the flesh so hard and crackley, that it is eaten like a Bigarreau Cherry, skin and all. This is said to be a late-hanging Grape, and if so it will be a valuable one.

A specimen of the fruit of Hurst House Pine Apple was sent by Mr. Page, gardener to Wm. Leaf, Esq., of Streatham, which weighed 7 lbs., and which was considered a very good specimen.

Mr. Alves, gardener to A. Hamilton, Esq., of Southborough, Kent, sent a Persian Scarlet-fleshed Melon of large size, ribbed and of a very dark bottle-green colour. The flesh was, unlike Scarlet-fleshed Melons, very tender and melting, remarkably juicy, and rich; this is by far the richest-flavoured and best of all the Scarlet-fleshed Melons we ever tasted. It was very justly awarded a first-class certificate.

Mr. Standish, of Ascot, sent fruit of a new Fig which came from the south of Europe, of most delicious flavour. The fruit is said to grow as large as the Brunswick, and the tree is a great bearer. This received a first-class certificate.

Mr. Terry, gardener to Lionel Ames, Esq., the Hyde, St. Albans, sent four dishes of Currants which were in beautiful condition, and which reflected great credit on Mr. Terry's management. They were as bright and fresh as we are used to see them in July. These received an extra prize.

George Wilson, Esq., of Gishurst Cottage, Weybridge Heath, sent magnificent specimens of the Melon Apple, Northern Spy Apple, and Chaumontel Pears. These were grown in an orchard-house, and both in size and appearance looked like tritons among minnows. They were remarkably fine and were awarded an extra prize.

Messrs. Paul & Son, of Cheshunt, sent a Seedling Apple called Cheshunt Pippin, which is said to be a long-keeping and excellent culinary Apple. It has much the appearance of Cellini, but not the flavour. Mr. Paul was asked to send it again, and in the meantime the Secretary was requested to have its culinary properties tested.

Mr. R. Holliday, gardener to J. Allesen, Esq., Friar's Place, Acton, sent very fine specimens of Cluster Golden Pippin and Blenheim Pippin.

old age has wrought a change for the better in their disposition; for when water impregnated with sulphur salts has for a long time passed through leaden pipes, or has long acted on leaden cisterns, the lead becomes coated with a sulphate or a sulphide; and sulphide of lead, being perfectly insoluble in pure water, and equally so in water not too excessively charged with foreign matters to be potable, renders the leaden vehicle perfectly harmless, and thus perfects it for the duties which in all other respects it performs in such a utilitarian manner. But we have a moral to append to our subject. Are we to wait content to be poisoned until our pipes become transmuted, or what are we to do? The remedy is said now to be easily attainable without waiting. Dr. Schwarz, a chemist of Breslau, has made a discovery that cannot be too highly esteemed in a sanitary point of view; which is, that by passing a hot solution of the sulphide of potassium through leaden pipes, the interior face is transmuted from the metallic state to that of a sulphide in a few minutes, at a cost too insignificant to mention. If, then, the need of some change in our water-conduit be satisfactorily shown (and we have endeavoured to do this for years), and the change proposed is based on equally well-known scientific truths, if water in the mines of galena, the sulphide of the noxious metal, be drunk with impunity, let us by all means see that for the future, at any rate, our pipes and cisterns be no longer silent poisoners, but made to support the character they have hitherto not fully deserved, of useful auxiliaries to the requirements of daily life.—(*Builder*.)

CONSTRUCTION OF GLAZED HOUSES FOR GARDEN PURPOSES.

A GENTLEMAN wishing to enlarge his garden establishment employed a well-known horticultural builder to construct a vinery and Pine-house. About the construction of the house I have nothing to say, but what I wish to solicit your advice upon is the gardener's part of the business—namely, the arrangement of the houses for their respective occupants.

I herewith send cross sections of both houses. The soil on which the houses are built is a very stiff, wet, yellow clay.

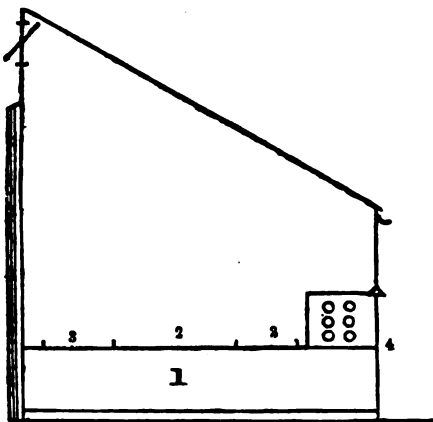


Fig. 1.

Fig. 1 is the vinery. To make the border, 1, the old soil was taken off to the depth of 4 feet, the bottom was concreted, a wall built all round to keep the roots in, and drains laid to take away all superfluous wet. 2 Is a stage for plants, which runs across both ends and along the middle. 3 Are walks. 4, Upright slabs of slate let into iron posts 4 feet deep at the highest part of the ground, but getting deeper as the ground falls, to keep the houses on the level. There was about 6 or 8 inches of brick rubbish put upon the concrete for drainage. The soil for the border consisted of about one-third very light fibry loam, one-third yellow loam without any fibre, and one-third of about equal parts of brick rubbish and very rotten dung almost reduced to sludge. The soil, after being turned over and mixed, was rammed and shot upon the drainage without any turfy matter, the loose stuff being put in to keep it from washing away by the rain.

Now, my idea is that in a few years the soil will wash in among the drainage and choke up the drains, so as to cause the Grapes to shank. There is an old vinery near, where the Grapes are much given to shanking; and the border being surrounded by wet, heavy, cold clay, will be colder and damper than it ought to be if the Grapes are required to hang any length of time or if early forcing is intended.

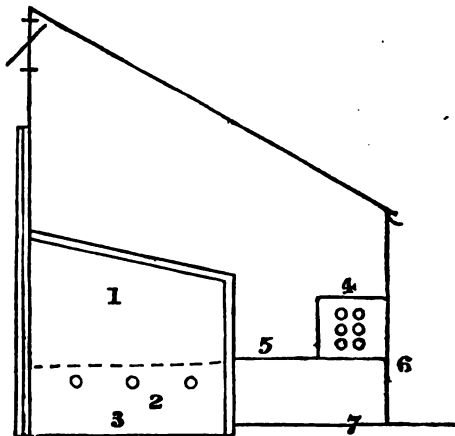


Fig. 2.

Fig. 2 is the house devoted to the culture of Pines. 1 Is the pit where the Pines are plunged, the dots across show where is the bottom of the tan; 2 are three hot-water pipes which are covered with brick rubbish, 3, up to the dots. 4 Is a stage originally intended for Orchids, but as the house is raised so high above the ground level, 7, it is impossible to keep the atmosphere moist enough for them, none of the hot-water pipes being cast with a trough to hold water. The gardener has had some zinc troughs made to fit on the top of one of the pipes, but on account of the rims that encircle the pipes the troughs do not touch, consequently the water is scarcely ever warmed; 5 is the walk which goes across both ends and along the front of the pit; 6 are the upright slates, which are here upwards of 5 feet deep.

In the present arrangement of the Pine-house the tan is fully 5 feet deep, and that body of tan put together new would get so hot that the roots of any plants plunged therein would be quite burnt up, unless it were allowed a month to cool, and that would be a great waste of time. Besides, in a year or two the tan would become rotten, and the best conceivable place for worms; they would reproduce themselves by thousands. Also, as it is a usual practice to repot Pines as early in spring as the weather and circumstances will permit, by the time the sun gained power the plants would be nearly burnt up, and the house being so very dry and not shaded at all, they would soon be worthless.

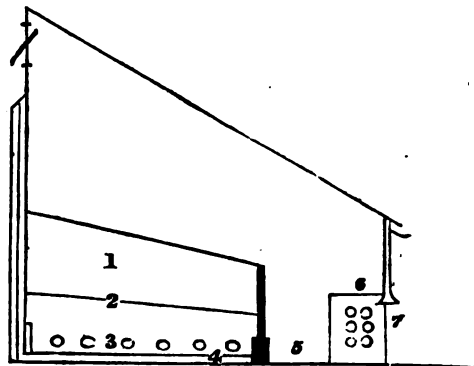


Fig. 3.

Fig. 3 is the same house as fig. 1, but I propose making it the Pine-house. My method is to supply bottom heat with hot water in the tanner's tank, and to hang the

would have 2 feet thick; not more. The bottom heat to be kept up by the pipes underneath, 3; and as screw valves are used the heat could be regulated to the greatest nicety. I propose having a tank, 4, to hold water for the pipes to run through, and to be filled or emptied at pleasure. The tank and pipes to be covered with rough slates, 2, resting on brickwork, and chinks left to be covered with old matting or some such material, and here and there a tin chimney to let the steam out into the body of the house when required. The pit to be 9 feet wide instead of 8 feet, as in *fig. 2*. Some might say that the pit would be too wide to render watering convenient, but that may be managed by leaving a little more room between the back row and back wall for laying a board on the bark to walk on; and by having a long rod to draw the foliage forward, the two back rows might be easily reached.

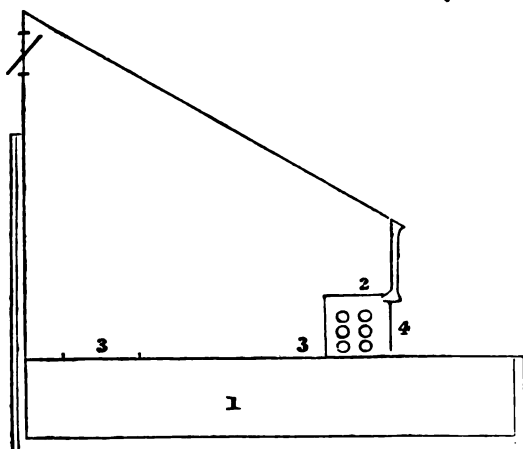


Fig. 4.

Fig. 4 I propose making a viney; the advantage it has over *fig. 1* for that purpose is very great. In *fig. 1* about 75 yards of clay were wheeled away. Here there is no occasion to wheel away any. The concrete may be laid upon the surface of the ground, and a drain, laid along the front of the house into a drain that runs near, would take all the superfluous water away. I propose that the border be made only inside the house at present. The slates not reaching quite to the ground, some narrow ones were screwed on to make them wide enough: consequently the narrow ones can be taken off at any time, and 4 or 5 feet added to the border along the front whenever the Vines require it.

It appears to me that there has been such a waste of labour and such ignorance displayed in the arrangement of these houses that I am induced to write to you to ask your opinion.—W. H.

[We are always ready to admit gentlemanly criticism, but we must also guard against our pages being made the vehicle of one-sided statements, and that by a second party, especially when the charges of "waste of labour" and "ignorance" are so broadly stated. On this account we suppress all names. We could not join in the charge of "ignorance" without being made acquainted with all the circumstances, as neither hothouse-builders nor gardeners can do at all times as they like. For instance: We have long advocated the planting of Vines inside of a house. Almost all of ours are planted outside, and we know full well that the making such internal arrangements as would permit of planting the front Vines inside is not to be thought about. We believe we could as easily have a new house as alter the old one. Again: We have recommended borders above the ground level, as advocated by our correspondent, in all such circumstances as he describes, but gentlemen cannot always be made to see as the gardener does. Not long ago we were consulted on this very subject, and in the long run the decision came to was this—"You may go as deep as you like, I will give all the labour necessary for moving earth, but I must not have a bank or border a bit higher than the rest of the ground. I could not endure it." And so at extra labour and expense the work was done much as our

correspondent describes, only after draining and concreting there were 16 inches of rubble instead of 8, placed over the bottom, and the finest on the top—a matter of more importance than a layer of open turf, as that soon rots. The drains are not shown by our correspondent, but at that depth there is little chance of their being choked up. With secure drainage and walled-in all round, there would be little danger from the damp cold clay. Even in his own case he will have clay beneath his concrete, and the damp will rise, at least we have found out no means of preventing this. We once had a Vine-border made waterproof on the surface for four years, and yet when broken into it was moist enough. Though agreeing, therefore, that No. 4 is a better mode than No. 1, we could not come to the conclusion about ignorance, unless we knew all the facts of the case. With such proofs of go-aheadism we are surprised that the position of the six pipes has been left undisturbed, even if the stages were to remain as proposed. Neither are we sure where the Vine-stems are to be. If in front, such a stack of pipes is rather near for them. We approve of the inside border being made first; but though this seems very reasonable, borders will no doubt continue to be made all at once, not so much from "ignorance" as from the fact that if not made then they will not be likely to be made at all. There are vast numbers of good employers who hate everything like changes, and who when they agree to a thing being done will insist on having it done at once, but "There must be no more bother about it; mind that, let it be done with."

Now, we confess that without further knowledge we are unable to discern the reasons why, in the Pine-pit (*fig. 2*), the bottom of the pit should be on the ground level (but that should not be the case,—a few inches below the pipes, three, would be deep enough), and the path and the pipes so far above it; nor yet why in the original design, or in that proposed by our correspondent, there should be a slate in front instead of a wall to keep heat in and cold out, and which is better than a slate of ordinary dimensions whose very colour, unless painted whitish, renders it such a good radiator. But, though we are ignorant of the reasons why such an elevation of the floor should have been made, we do not see, now that it is done, what great improvement is given to us in the section No. 3, which could not be obtained by taking 18 inches or 2 feet off the front of the wall of the pit behind the pathway, as in such pits close to a pathway the plants will be more out of the way if the pots are at least 6 inches below the front curb of the pit. It is true the bed in No. 3 will be a foot wider than in No. 2, but that will be no advantage; and there will be six pipes instead of three for bottom heat, and these will be placed in a tank to be filled or emptied at pleasure, involving not "ignorance," but a considerable extra "outlay of labour and expense."

If the Pine-house, *fig. 2*, were supplied with bottom-heat by tan alone, then we would wish it to be 4 feet deep, but when heated by hot-water pipes we would prefer a concrete basin beneath them, 6 inches of rubble above them, and not more than 18 inches of tan above that. We agree, then, with our correspondent, in the shallowness of the plunging material, and also in the mode of securing from the tank a moist atmosphere when desirable. We could also do the same without a tank, though not so easily. As to his other objections they are more fanciful than real. For instance: A thin layer of tan as it gets old, is as apt to be infested with worms as a deep one. Again: Persons acquainted with tan would never think of putting it new 5 feet deep in a bed at once, without previously sweating it in a heap, and then with care in plunging, there is not so much likelihood of burning the roots as there would be by a strong heat in these six pipes in the tank. The burning could in either case only take place from carelessness, but though the turn of a valve will regulate all to a nicety, that valve may not be touched, and then there is a steamer and no mistake. Neither do we agree in the impossibility of keeping a moist atmosphere in house No. 2, because it is elevated so high above the ground level. The floor in either case may be kept equally damp. If stage No. 4 is slate, a ledge might be placed all round, and water kept on it as in a shallow cistern, and the bottom of the pots, &c., could stand above the water. We see no reason why the lower pipes should not pass through an open gutter, and be more under command than when placed under a bed. And the impossibility of

getting the zinc troughs to act seems the strangest complaint of all. Because there are rims or beads encircling the pipes at certain distances, is that any reason for putting the zinc troughs on these rims, instead of having them of suitable sizes to be placed between them? If so done, and if in addition they are fixed on with some thin white lead, so as to exclude air between them and the iron pipes, we will guarantee that when the iron pipes are hot, and the zinc pipes supplied with water, they will give off abundance of vapour.

Though, therefore, we agree to a certain extent with our correspondent, yet we should require to know much more before we came to the conclusion that the builder or the gardener acted in "ignorance." It is not seldom that we have seen a house built for one purpose turned to another purpose for which it was never designed.

It is rather surprising that our clever correspondent has kept so closely to the track marked out in No. 2. In that and No. 3, the alteration, the bed is most unworkable. Our idea would simply be in such a 16-foot house, to have a 9 or 10-foot bed in the middle, 3½ feet behind for path, and the same in front; the pipes close to the ground, in front and ends four, two behind as returns, and to get moisture at command, and four in the centre beneath the bed, and 20 inches of tan above the rubble, with shelf at front and back. Above the pipes in front have a shelf of 14 or 15 inches, and several against the back wall above the height of the Pines; and with such an arrangement it would trouble us little whether the floor was raised as in No. 2, level with the ground as in No. 3, or sunk below it as many Pine-houses are.

Shading is purely a gardening matter, and needed at times in one case as much as in the other, especially if the plants are used to it. It is most required in changeable weather.—R. F.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE late fine weather has, we trust, been taken advantage of for carrying out all operations previously directed. Perseverance must still be continued in the way of hoeing, forking, and surface-stirring amongst progressing crops, particularly Coleworts, Cabbages, late Savoys, and Curled Kale, as considerable demand for articles of this description may be expected throughout the season, and more especially in the spring. Spinach, too, must have the same attention, and the under or decayed leaves should be cleared away in due time. *Asparagus*, the haulm to be cut on a fine day when sufficiently decayed, tied in bundles, and used for thatching purposes. When clearing the refuse from *Asparagus*-beds, and the decaying leaves from the Broccoli, Kale, Savoys, &c., observe particularly if there are any fresh-used mouse-holes; if any should be discovered, get some water at once and begin pouring it hastily into the hole, which will be the cause of starting the inmates, otherwise when the Pea-sowing season arrives these vermin will eat and root part out of the soil. It is necessary to have a flat brushy bough in the hand to destroy them. *Artichokes*, cut down any remaining flower-stalks, remove a few of the large outer leaves, and cover the roots with dry litter or old tan. *Beet*, take up the roots carefully, and having cleared them of leaves preserve them in sand in the same manner as Carrots. *Cauliflowers*, look well to these and Lettuces; take off decayed leaves, and dress with lime; give air to those in frames at every favourable opportunity. The Cabbage Lettuces intended for winter use will not need it so freely.

FLOWER GARDEN.

There should be no more delay in carrying out the necessary preparations for severe weather. The angry storms of autumn are gathering power; the limitation of solar light, the brooding mist, and above all, the fall of the leaf, are significant warnings of the approach of winter to all whose interest extends to a garden. Whenever out-door operations are interrupted, the preparation of all sorts of protective materials can be actively promoted. The stock of Russian mats should be tied, and others of reeds, straw, &c., should be made. Hardy creepers should be examined at this season, all unnecessary spray removed, and their security from the blasts of winter insured. The Dahlias to be marked and numbered by their position in the garden, and the

beds to be now looked carefully over to see if there be any choice plants which cannot be suffered to become frosted, such to be taken up, potted, and removed to the frames. Wherever alterations are in progress lose no time in completing the transplanting of evergreens, the present mild damp weather being favourable for their removal. Such parts of the lawn as are contiguous to the mansion to be swept daily to remove leaves and worm-casts, and the gravel walks to be frequently rolled to preserve a smooth surface. The present is a good time for re-arranging the herbaceous ground; this is rendered necessary every two or three years by many of the free-growing plants growing too large. Continue to clear off decayed matter from the flower-beds, and continue the planting of Tulips, Hyacinths, Crocuses, Anemones, &c. Spring-flowering plants, such as Primroses, Cowslips, Polyanthus, Iberis, Arabis, Alyssum, Wallflowers, Canterbury Bells, Sweet Williams, Foxgloves, &c., to be planted in masses in the beds and borders, thus imparting a cheerful appearance during the winter months, and producing a gay effect in the spring.

FRUIT GARDEN.

Bush fruit may now be pruned. Let no two branches in the Black Currant and Gooseberry touch. When finally thinned these seldom require shortening. Follow with Cherries, Plums, and Apples. In pruning Apples the thinning of the branches or old wood should be the first step. Avoid cutting out large limbs, unless a severe necessity requires it. In thinning the young wood of espaliers, the principal points are to secure a continuance of leading shoots to form a compact tree and the free admission of sun and air to all parts of the tree. Towards Christmas lay by the knife until the early part of February, when the Filberts will be blossoming; then a slight thinning of the crowded and inside spray to be given to them. The Apricots will also at that time give indications by which to know the blossom-buds, when they may be pruned. The Peach and Nectarine will succeed the Apricot, and these may be followed by the Pear, and lastly by the Fig. Raspberries may now be planted and pruned. Pay every attention to getting the wood of Peaches and Apricots well ripened by exposure to sun and air. Prepare for planting all kinds of fruit trees by putting the ground in good order for the different kinds. On cold stiff soils it is advisable to plant on hillocks 1 foot or 18 inches higher than the surrounding surface. The trees will not grow so fast in consequence, and will require more attention in summer in the way of mulching; but they will form short-jointed, well-ripened, fruitful wood, which is the best preventive of canker, gum, &c., and will save the labour of resorting much to root-pruning.

GREENHOUSE AND CONSERVATORY.

Hyacinths and other Dutch bulbs, if not already bought, should be procured and potted without delay. The old *Salvia splendens* is a very gay plant, and useful for mixing among *Chrysanthemums* in the show-houses. Let *Asaleas* be tied into form as soon as can be done. Repot strong-growing *Pelargoniums*. There is sometimes occasion to employ fires at this period in the year, as much to promote an active ventilation and remove all superabundant moisture as to make up for the deficiency of heat from external sources. However, assistance of this kind must be used with great circumspection, and no actual interruption given to the system previously advised, of gradually reducing the temperature to correspond with the natural decline of the season and consequent limitation of solar light and heat. Considerable mischief is sure to ensue from an injudicious application of fire heat, particularly if used at night, and this should be kept in view throughout the season. This rule of treatment applies more particularly to conservatory and greenhouse stock, which it is desirable to maintain in a state more or less quiescent. A contrary system must be put in force with growing *Begonias* and other stove plants for early flowering. The excitement of bottom heat is of the utmost advantage, and that, of course, can be best secured to the plants by plunging them in bark or leaf-beds.

PITS AND FRAMES.

Abundance of air and light must be admitted to these structures. If any of the lights afford a partial shade to the plants, from the accumulation of dirt thereon, take them off and wash them thoroughly without delay. Be careful

during the operation of watering to apply it only to plants that require it. Remove all mouldy and decaying leaves, and keep the interior as dry as possible during dull foggy weather.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WEATHER generally stormy and wet, and work regulated accordingly. In fine days hoed, cleaned, and stirred; in wet days made boxes, tallies, washed pots, mended and made straw covers or hurdles. Tying and roping Onions in bundles formed also part of our work. Covered a bed of Dwarf Kidney Beans with old sashes, &c., but find they do not swell so fast as we should like. With a few sunny days they would be all right, and would last some time after frost came. Trapped and caught slugs, mice, &c., and pricked-out a few more Cauliflowers and Lettuces. Gathered the rest of the Capsicums, and learned from a chief of the kitchen what we surmised last week—that the seeds of the Chillies are as good for Cayenne pepper as the outside of the seed-vessel, but the colour is so wanting in red that gentlemen would not believe it to be Cayenne. We recollect something of the badinage with which a nobleman was assailed for recommending a little curry powder to the hard-working labourer before he went to bed at night, and we have no doubt it was a very good advice. A bit of Capsicum or a little Cayenne in hot water might keep off many an ailment from men who go home wet, and sit in their wet clothes.

We trust that the much that has been said for the last month on working men's homes will not end in mere benevolent talk. Cottages often, bad as they are, are palaces to the accommodation which many lads put up with at farmhouses. Need we wonder that many of them become old men at thirty, when as horse-boys they frequently wear their wet clothes from one end of the week to the other, and are not permitted a fire either to dry their garments or cook their victuals? There is much need for such matters being looked into. Only lately we heard of a farm undergoing alterations and improvements, and the mechanics and labourers were denied the use of a fire and debarred the privilege of hot water. Is it natural to suppose that men would work with energy who, in addition to walking a number of miles in the morning, must carry with them their tea and coffee in a liquid state in a close vessel, and if they wished it warmed must resort to a heap of lime, intended for mortar, for the purpose? To their honour be it stated, that proprietors generally have had such matters changed when it came to their knowledge. It is owing to this knowledge, and a determination that those who work for them shall be comfortable, that gentlemen have swept away many of those filthy holes of bothies in which young gardeners were forced to reside. That there are still some remaining that, in point of comfort and healthiness, are far inferior to the pigsties and corn-byres in the home farms is almost entirely owing to want of inquiry about the subject, and to a want of the matter being courteously placed before them. Head gardeners' houses have partaken of the improvement. Nothing can be more cheering than the nice commodious homes rising in every direction; but there are many still needing great improvement and enlargement. Not long ago we saw a miserable back shed in which a large family had been reared that was scarcely large enough for a single man to live in. Gardeners who are privileged themselves with healthy homes should leave no means untried to obtain a healthy residence for the young men that live on the premises. The rain falling heavily, and the mud-covered rain-draggled state of many young labourers going home to miserable quarters, must form our apology for the above. We would also observe that all such selfishness as we have referred to will be sure to fail in its aim. To get the most from a man when energy is most needed he must be used considerably in unfavourable weather. The days of setting men to nail in keen frosty weather with the falling snow blinding them, or mowing long after the rain streaming down their backs has gurgled out of their boots and shoes, will be remembered, we trust, as belonging to a rude and barbarous period. We have seen the latter done when four-fifths of those employed, from being in lodgings, had

no chance of drying their clothes unless what could be done by the chance sun of the following day. Capsicums and even a good Onion would be no bad thing under such circumstances.

FRUIT GARDEN.

Gathered most of the Apples and Pears, except a few late ones of the latter against walls, as *Easter Beurré* and *Beurré Rance*. Forked among Strawberries as the ground was becoming hard on the surface from the rains. Pricked out runners thickly in case they should be needed. Pruned and thinned Raspberry plants, which ought to have been done earlier. Swept the leaves gently off Peaches and Apricots that the wood may be more indurated. Did the same with Figs, and will slightly protect the latter out of doors. Rough-pruned Currants and Gooseberries so as to let more light into what was left, and will do the same with Apples and Pears as soon as we can get at them. Kept a little fire in vineries to dispel damp, leaving air on as yet night and day at the back of the house; but unless in a very fine sunny day gave no front air—in fact, have given little front air all the season, and find, that as a general rule, early air-giving renders a great amount of air needless, especially when your fuel is a matter of consideration. The heat in the pipes and flues during the day in some places, would lead one to imagine that the gardener was running a race of heat against the sun, and was determined to beat him.

Our Melons are about over, as they would require more heat than we can well give them to impart flavour, and most people are afraid of such fruit so late in the season. Where Vines are started early they should have a low temperature at first—from 50° to 60°, and plenty of moisture in the air until all the buds are broken. Pines intended to show fruit from Christmas to March should now be kept moderately dry at the roots and in a drier atmosphere, but not much reduced in temperature—say from 60° to 65°. Those ripening should also be kept drier, and those swelling should have a damper atmosphere, especially in sunny days. Plants grown in dung-pits should have the linings well raised about the pits, so that heat may be thrown into the walls without moisture from the dung. The drier the atmosphere in dung-pits in winter the better, as there will be sure to be enough of moisture if dung alone is used as a heating medium. No doubt hot-water pipes are the most economical and cleanest mode of heating, merely as regards heating, but many of us find that when we give up dung for heating, we have a difficulty of getting dung at all; and these beds and linings were grand heaps to go to for all the general crops of the garden.

ORNAMENTAL GARDENING.

Much the same as last week. Stove climbers should now be cut partly back to give more light. We must except such as *Bignonia venusta* and *Combretum purpureum* now in bloom, but all other Bignonias, *Passifloras*, &c., may be pretty freely dealt with. It is safest to do this work at twice and thrice, and the roots get more used to it, and are not checked so much as if it is done at once. Did the same with conservatory climbers, and will do more by the end of the month. We have, as yet, taken up no more plants from the flower garden, as it is still passable; but whenever there is a sign of frost will lift what we want, place them in sheds, and treat as we wish afterwards. Gave plenty of air to all bedding-plant cuttings. The *Calceolarias* after being inserted in a cold pit and watered, have had nothing done to them since, but air is given at night, and shut out next day at 9 A.M., if sunny, and left on if shady. Swept and rolled lawns, as worm-heaps are now becoming unsightly, and will continue until we have a frost. Dahlias still good.—R. F.

METHOD OF KILLING SLUGS.—Some time ago M. Comman-deur, of Paris, accidentally left in his garden a pot, in which he had been making experiments with starch and iodine, which pot, imperfectly covered with a piece of board, remained exposed to the heat and rain for three weeks, when on looking one morning into it, he was surprised to find it tenanted by scores of snails and slugs that had congregated in it from every part of the garden. He repeated the experiment several times, and ascertained that the emanations from iodine will attract these creatures from a considerable distance, when they may be killed by hundreds.

TRADE CATALOGUES RECEIVED.

W. H. Davis, Newbury, Berks.—*Descriptive Catalogue of Selected Roses.*

A. Verschaffelt, 50, Rue du Chaume, Ghent.—*Catalogue of New Plants.*

COVENT GARDEN MARKET.—Oct. 17.

The supply both of fruit and vegetables is amply sufficient for the demand. Late Peaches may still be obtained, and a few Melons. Of foreign Grapes there is an abundance. The Potato market is still heavy, and some diseased samples are making their appearance. Cut flowers mainly consist of Orchids, Roses, Pelargoniums, Asters, Marigolds, Violets, Mignonette, and Wallflowers.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	1	6	to 4	0	0	0	0
Apricots.....	dos.	0	0	0	0	0	0	0	0
Figs.....	dos.	1	6	2	6	0	0	0	0
Filberts & Nuts 100 lbs.	55	0	75	0	0	0	0	0	0
Grapes, Hamburgs, lb.	1	6	5	0	0	0	0	0	0
Hambro's, Foreign	0	9	1	6	0	0	0	0	0
Muscats.....	0	0	0	0	0	0	0	0	0
Lemons.....	100	8	0	14	0	0	0	0	0
Melons.....	each	1	6	4	0	0	0	0	0
Mulberries.....	quart	0	6	0	0	0	0	0	0
Oranges.....	100	8	0	12	0	0	0	0	0
Peaches.....	dos.	6	0	11	0	0	0	0	0
Pears.....	bush	5	0	7	0	0	0	0	0
dessert.....	½	sieve	2	6	5	0	0	0	0
Fine Apples.....	lb.	3	0	6	0	0	0	0	0
Pines.....	½	sieve	4	0	7	0	0	0	0
Quinces.....	dos.	0	9	1	0	0	0	0	0
Walnuts.....	bush	14	6	20	0	0	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad.....	bush	0	0	0	0	0	0	0	0
Kidney.....	½	sieve	0	0	0	0	0	0	0
Beet, red.....	dos.	1	0	1	6	0	0	0	0
Broccoli.....	bundle	0	9	2	0	0	0	0	0
Cabbage.....	dos.	0	9	1	2	0	0	0	0
Capiscums.....	100	1	2	2	0	0	0	0	0
Carrots.....	bunch	4	0	8	0	0	0	0	0
Caiflower.....	dos.	4	0	8	0	0	0	0	0
Celery.....	bundle	1	6	2	0	0	0	0	0
Cucumbers.....	doz.	0	8	1	0	0	0	0	0
pickling.....	dos.	0	8	1	0	0	0	0	0
Endive.....	score	1	2	2	6	0	0	0	0
Fennel.....	bunch	0	3	0	0	0	0	0	0
Garlic and Shallots, lb.	0	8	0	0	0	0	0	0	0
Gourds & Pumpk., each	0	0	0	0	0	0	0	0	0
Herbs.....	bunch	0	3	0	0	0	0	0	0
Horseradish ...	bundle	1	6	4	0	0	0	0	0
Leeks.....	bunch	0	3	0	0	0	0	0	0
Lettuce.....	score	2	0	2	0	0	0	0	0
Mushrooms.....	potl	1	0	2	0	0	0	0	0
Must. & Cress, punnet	0	2	0	0	0	0	0	0	0
Onions.....	bunch	0	4	0	6	0	0	0	0
pickling.....	quart	0	6	0	0	0	0	0	0
Parley.....	bunch	0	2	0	4	0	0	0	0
Parasips.....	dos.	0	0	0	0	0	0	0	0
Potatoes.....	bush	0	0	0	0	0	0	0	0
Potatoes.....	sack	5	0	8	0	0	0	0	0
Radishes dos.	bunches	1	6	2	0	0	0	0	0
Rhubarb.....	bundle	0	9	1	6	0	0	0	0
Savoy.....	per doz.	0	9	1	6	0	0	0	0
Sea-kale.....	basket	0	0	0	0	0	0	0	0
Spinach.....	sieve	1	6	2	0	0	0	0	0
Tomatoes.....	½	sieve	2	6	4	0	0	0	0
Turkeys.....	bunch	0	3	0	6	0	0	0	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 162, Fleet Street, London, E.C.

JELLY-LIKE SUBSTANCE (H. A. D.).—It had become entirely liquid, but we have little doubt that it is Tremella nostoc, a cryptogamic plant in the form of jelly-like lumps, and frequently found on gravel walks. It is sometimes called Star-slug, it being popularly considered as an emanation from the stars.

TURNING OUT VINES (J. T., Swansea).—We would advise you not to turn out your Vines at any season. Turning out Vines is only necessary and advisable when the vine has to be turned to some account during the season the Vines are at rest—such as for forcing anything else requiring a temperature too high for Vines. If this be desired in your case, the Vines may be turned out; but it is not good to expose them unprotected to more than 6° of frost, and some covering of mats or straw should be put over them to protect them from severe weather. The best management for Vines from which the fruit is all cut early in October, is to keep them as cool and airy as possible all the winter. The temperature should not exceed 40°. In the case of Vines that have not well ripened their wood a little fire heat and a circulation of warm dry air should be applied immediately the fruit is cut, and continued till the young wood becomes quite brown and firm. As soon as all the leaves are shed they should be pruned. All other particulars you will learn from the treatise sent according to your wish. Sanders "On the Vine," is published at our office. If you send sixty-two postage stamps with your address you can have it free by post.

GRAPE VINES WEAK (An Old Subscriber).—To make your Vines stronger you might give a hundredweight of superphosphate of lime to the eight-foot border. This, however, would not prevent shanking. If you have given air enough the cause of the shanking is deep roots or undrained roots—that is to say, unless you have too heavy a crop. If from stagnant water, a deep drain in front of your flower-border would do much, as most likely the roots are already beneath the flower-beds. We should be inclined to try that and the enriching the eight-foot border for this year, making the superphosphate go all over in three times or so, a month apart, choosing dry weather and watering directly. To make perfectly sure against shanking, if from stagnant moisture and deep roots, lifting would be the great remedy; and in your case if you lifted we would advise planting inside, taking the roots outside as well through openings in the wall, and confining them outside to the eight-foot space. We would secure drainage at the same time, and use fresh soil, specially in part. See account of Keble Hall as to future management.

GRASS FLAVOUR CUTTINGS (M. A.).—You had better keep the cuttings under glass during the winter, taking it off in mild periods, but replacing it over them in severe and very wet weather. This will protect them a little, or the plant is only hardy in some situation. Many have sent to the editor a letter, saying each with a good deal.

ASPHALT WALKS (Aster).—Asphalt, Bitumen, or Jew's Pitch, is found floating on the Dead Sea and elsewhere. It becomes very hard by exposure to the air, and its name has been appropriated to various artificial preparations, all of which owe their properties to the boiled gas-tar which enters into their composition. Thus the asphalt felt is rendered waterproof for shed-roofing, &c., by being soaked in that tar; and asphalt walks are most dry and excellent when made as follows:—Take two parts of very dry lime-rubbish, and one part coal-ashes, also very dry, and both sifted fine. In a dry place on a dry day mix them, and leave a hole in the middle of the heap as bricklayers do when making mortar. Into this pour boiling-hot coal-tar; mix, and when as stiff as mortar, put it 3 inches thick where the walk is to be. The ground should be dry and beaten smooth. Sprinkle over it coarse sand; when cold pass a light roller over it, and in a few days the walk will be solid and waterproof. Your bark-bed must be 4 feet deep; but will be an uncertain source of heat unless enclosed and capable of being partially stirred and mixed in the event of the heat declining. The price of the "Cottage Gardeners' Dictionary" is 8s.

BROWN PEACH (E. S., Hampstead).—We never heard of this Florentine Peach "something between a Peach and an Apricot, both in taste and appearance." Probably it is one of those yellow-fleshed Peaches common in the south of Europe. You may sow the stones now and put the pots in your greenhouse. The plants will appear next spring, but they will not be exactly like their parent, probably in any respect. To obtain the exact variety you must procure some buds.

VINES FOR A COLD VINERY (Lez).—As you only look to the profit of their culture, there are no better Vines for your purpose than the Black Hamburgh and Black Champion.

CALCEOLARIAS AFTER FLOWERING (J. F. H.).—Take the plants up with a moderate-sized ball, and place in pots very little larger than the ball, just sufficient to contain the roots without thrusting them in. Leave all the top on the plant for about a fortnight, when all the old wood may be removed, being careful to retain the young wood. They will do very well in the pit, but you must give no more fire heat than enough to dry up damp and exclude frost. Such plants afford numerous cuttings in early spring, which strike readily in a little bottom heat, whilst the plants themselves bloom finely in May in the greenhouse, or in April if few cuttings are taken. When spring-struck cuttings are rooted and hardened-off they may be planted in nursery-beds in some sheltered situation, adding some leaf-mould to the ordinary soil, putting in the cuttings 6 inches apart each way, and pressing the soil firmly round them. Water copiously, shade from sun, and protect at night from frost with mats. Such cuttings make nice bushy plants by the beginning of June, when they may be transferred to the beds, taking them up with a ball. They grow more freely than plants that have had their roots cramped in small pots during the winter.

YOUNG PEACH TREES UNFRUITFUL (J. F. H.).—Try what less pruning will do towards rendering your trees more fruitful. If the trees are very vigorous cut the leading shoots back but one-fourth their length, and the bearing shoots to 9 inches, and leave them that distance between each. If the wood ripens well and grows growths are not made late, we do not see what is to hinder them fruiting another year. However, should they make rampant growths which do not ripen, and are not well studded with blossoms, take them up, plant on the surface, and cover the roots with 3 or 4 inches of soil; tread it firm if light, and mulch the surface where the roots are to preserve them from frost and the drought and heat of summer. If the border is rich and deep it should be made shallower, 20 inches of tenacious loam on a concreted bottom with perfect drainage being the essential elements of a Peach-border. If your border is all right and the roots not deep, be content with a few fruit, as your trees will be all the better and the crops much finer in future years than when they are allowed to bear heavy crops before the tree is half formed. For propagation directions buy our "Garden Manual," which you can have free by post for twenty postage stamps from the office of this Journal.

ROOT-PRUNING OLD FRUIT TREES (A Novice).—Root-pruning will only be beneficial to trees which are over-luxuriant, and that is not likely to be the state of your old fruit trees. They probably are weakly and moss-covered. If so, paint them over with a creamy mixture of quicklime, manure the soil, and keep it mulched throughout the dry weather in summer.

QUANTITY OF TOBACCO REQUIRED FOR FUMIGATING (R. T. B.).—Two ounces of shag, if the pit 12 feet by 8, is 2 feet in depth, and four ounces if it is double that depth. The smoke to remain in until it vanishes. It will do so in about an hour; but sooner in a dry than damp atmosphere. The plants must be dry when smoked.

PROPAGATING CRATAEGUS CANDIDISSIMA AND C. ARGENTEA (R. T. B.).—To obtain a stock keep the plants in a dry airy place until spring, when cuttings may be taken when the plants have young shoots about 3 inches long. They strike freely in silver sand if placed in a little bottom heat. Seeds sown in spring make good plants by that time twelve months.

MIGNONETTE FOR CONSERVATORY (J. J. J.).—It is too late now to sow seed for the decoration of the conservatory in winter and spring. However, if you have any plants in the garden, nice bushy young plants that have not flowered, take them up with good balls and pot them in 24-sized pots in a compost of light turfy loam and leaf-mould with a free admixture of silver sand. Water sparingly and keep in the shade for a few days; then pinch off the flowers. Give just enough water to keep them growing during the winter, and place them near the glass in a well-ventilated part of the greenhouse or conservatory. Such plants bloom freely throughout the winter and spring, but are not so fine as plants raised and grown for the purpose. We will be in time with an article telling you how to obtain fine plants for another winter. Sanvitalia procumbens is worth little as an edging. It would not last through the summer in good condition.

MYRTLE LEAVES DISEASED (A Subscriber, Manchester).—They are very severely infested by the scale insect. Wash the leaves and all the branches with a creamy mixture of soft soap, flowers of sulphur, and tobacco water. Boil half a pound of tobacco in two gallons of water, dissolve in it 1 lb. of soft soap, with which 1 lb. of flowers of sulphur has been made into a paste. Leave the plant for two days after being thus washed, and then wash it in water at the temperature of 120°. Give your plants more air and moisture.

SIX DARK HYBRID PERPETUAL ROSES (Acquiesce's name lost).—Emperors de Maroc, Eugene Appert, Alexander, Cardinal Parisien, Madame de France, and Prince de Monaco.

WALNUT TREE NOT BEARING (Lee).—You will find an article in another page replying to the inquiries you have made.

HEATING A SMALL GREENHOUSE (Gylling).—We do not know what piping you have, and, therefore, cannot say whether you will have sufficient. With an iron plate or two you could bank the fuel at bedtime against the reservoir at the back of the parlour fire. You might also secure a good amount of heat from a good gas-burner placed beneath a concave vessel, and a pipe from it going out of doors to carry away the fumes. Perhaps a small stove with a small iron chimney through the roof would be the simplest. We object to any stoves inside that have no outlet for the products of the combustion.

HEATING A PIT (A Subscriber).—We can hardly understand how you have used your iron vessel 3½ feet long, 2 feet wide, and 9 inches deep. If set upon a hot fire, and 6 inches of sand placed on the bottom of it, you would have heat enough if you covered the top with moveable glass. You do not tell us when you tried your cuttings. Verbenas need no extra heat in autumn. The idea of taking a fire round such a trough and setting it in a two-light frame seems to be doing much work for little use. If you have no regular heat in your fire, the best way to use such a tank for propagating in a cool greenhouse, would be to elevate it either on the fire or otherwise. Drill a hole at bottom for tap or plug, to empty it when desirable. Leave space for 3 inches of water at bottom. Support in that thin slate, covered with 2 or 3 inches of sand, have a pipe and funnel to put in hot water, and draw off when cold—say once a day. Wrap the tank round with cooco-nut matting or cloth of any kind to prevent radiation of heat. Your tank over them will not be so good as one of wood. For small propagating-houses, see no end of descriptions, and watch for a notice of Mr. Lane's propagating-houses. We could say nothing as to your tank standing fire heat unless we saw it.

VERBENA AND FETTERIA CUTTINGS (Anna Ardagh).—As they are well rooted you may top them now being too much drawn. Give them more air and light.

POETRY (G. D.).—The verses would do very well for a lady's song, but they are not suitable for our Journal. Very few people are aware that rhyme is not necessarily poetry.

JOSEPHINE DE MALINES PEAR (F. Howes).—The following is the description given in Dr. Hogg's "Fruit Manual."—"Fruit about medium size. Skin yellow with a greenish tinge on the shaded side, and with a tinge of red on the side next the sun; the whole surface strewed with large russet spots. Eye open, set in a rather shallow depression. Stalk three quarters of an inch long, stout, and inserted in a narrow cavity. Flesh yellowish, with a tinge of red, melting, and very juicy, sugary, vinous, and richly flavoured, with a high rosewater aroma. A most delicious Pear, in use from February till May. The tree is hardy, and an excellent bearer." No better aspect than a south wall could be had for Green Gages.

INSECTS (J. E. B.).—The caterpillar you have sent, found devastating a Rose tree, is that of one of the moths forming the family Geometridae, and appears identical with *Geometra plumaris*, Hb. Should you find any other specimens we shall be obliged by your sending them to us, but we believe its connection with your Rose tree was accidental.—W.

VARIOUS (H.).—We have no faith in sawdust for mulching, and do not like it at all unless charred or thoroughly rotten. We should employ the peat earth or heath soil as described. Pulverised freestone clippings will answer as well as silver sand for the purposes to which it is applied if the freestone is free from chalk, and still more, is not impregnated with magnesian limestone. In these cases it will not take the place of silver sand. The phosphatic green sand we fear would be more fit for manure than for striking cuttings. Sea sand would not answer for propagating purposes unless thoroughly washed, neither would pounded chalk or marlstone be themselves or mixed with such sand. Such sand in heavy land would be a good dressing for Sea-kale, Asparagus, &c., and a sprinkling of it would do good to most kitchen gardens. Ground vineries, we presume, are what are called curates' vineries. The Vines are planted, and the stems trained either over a trellis, or some 9 inches above the ground, the ground being covered with slate and a hipped roof of small dimensions—say 18 or 24 inches wide, and 15 to 18 inches on the side of span, and if moveable, lengths of 6 feet or so are placed over them, set upon bricks every 2 feet or so, which admit enough of air between them in the hottest days. We do not know your place of residence; but we have more faith in your succeeding by this mode than by planting Vines in the open ground and training them to rods, as done in France and on the Rhine, much as we do Raspberries here. It is just possible that in a warm sheltered spot you would succeed. Mr. Rivers used to succeed pretty well with these ground vineries, of which you will find a drawing and description in No. 28, page 30. The slates, whether on the level or as forming the sides of the trench, were covered with sulphurous paint.

FLIES ATTACKING GRAPES (J. Forrest).—Prevention is your only remedy. Keep the flies out of the vine by putting lace-net over the windows and ventilators.

ALOEASIA LOWII CULTURE (George Sim).—If it be well established in the pot, and the roots matting round the pot, give it a shift into a pot 3 inches wider than the one it is now growing in. Drain well, and put with a compost of turfy peat and fibry loam three-fourths, equal parts of both, pieces of charcoal the size of a hazel nut, and silver sand the remainder of a whole. It, like its congener *Aloeasias metallica*, requires a high stove temperature and abundance of atmospheric moisture. A temperature of 65°, and not lower than 60° by night, in winter, with a rise of 10° or 15° by day, is about the proper winter temperature, during which it should be kept moderately dry at the root. It will need shifting again as growth commences in spring, a more frequent application of water, and an increase of temperature; 70° by night is not too high, whilst in summer it will not harm this plant if the temperature range to 75° by night, with an increase of 10° in cloudy weather, and from 15° to 25° with sun by day. It should be kept near the glass, or it is apt to become drawn, and must have abundant atmospheric moisture and water at the root when growing.

ANOMATHECA CRUENTA SEED SOWING (M. D.).—Sow in spring in a gentle heat. Keep there until the plants appear, then gradually harden-off and grow on in the greenhouse. Another way is to sow the seed outside, and thus save the trouble of raising in heat. The former plan, however, makes a plant in half the time of the latter. It is quite hardy, as you no doubt know, and we can say with you, "It is a great favourite here," and only seeds seeing, though it is as old as the hills, to win a place in every garden.

FRAGERS FOR WALL IN THE NORTH OF IRELAND (Belfast).—You will find Early York, Barrington, Bellegarde, and Noblesse, do very well with you.

FERNES INVENTED WITH THRIPS (Idem).—You cannot smoke too soon; but do it gently, yet filling the house with smoke. Do this two nights in succession, syringing the plants the morning after each smoking; but you must have the foliage dry before smoking, though you may and ought to sprinkle every available surface with tepid water twice daily, taking care not to wet the fronds. This will surcharge the atmosphere with humidity or moisture, and that is what Ferns require. You must not expect the first nor even the second smoking to thoroughly eradicate the thrips; though it will destroy all the perfect insects, yet there are eggs which will hatch in a few days: therefore the moment you see thrips smoke at night, and continue to do this until a thrips cannot be found. Our "Fern Manual" would save you much of the trouble you complain of.

GNAPHALIUM LAMATUM PROPAGATING (M. D.).—Cuttings of the young shoots strike readily in loam, leaf mould, and silver sand in equal parts, placing them in a bottom heat of 75°. They also strike freely in a greenhouse with a bell-glass over them, but are longer about it. Cuttings are best put in in August, which are potted-off when struck, wintered along with the other bedding plants, and every way having the treatment of a Verbena. It is rather impatient of damp, but not more so than Verbenas. If the plants are placed in a warm greenhouse, say 50° by night, in the beginning of February, they will grow freely and each give many cuttings in March; and if they be taken off with four joints, cut immediately below the lowest leaf transversely, the two lowest leaves removed, and inserted round pots in silver sand with a little loam and leaf mould in it, gently watered through a fine rose, and then plunged in a brisk bottom heat of 75° to 80°, the cuttings will root in a few days. Then they must be hardened-off gradually, potted into 48-sized pots in a compost of loam and leaf mould in equal parts, with a little silver sand intermixed. Such make first-class edging plants, second to no silver-edging plant in cultivation.

SALVIA PATULA NOT FLOWERING (M. D.).—It is a biennial from Portugal, and is hardy in most localities. You have coddled it, and nearly killed it with kindness. Plant it in the garden border next summer in the full sun, and give it some nice soil as a little leaf mould, but not strong manure, and thus induce free growth. Its existence is only prolonged by striking it from cuttings, and as in the case of many other biennials and even annuals, it is weakened by the process, and they could be had stronger and freer-flowering from seed. Cultivators will find nature's laws cannot be long broken with impunity, of which your plant affords an example. If you succeed in obtaining seed sow the spring following in the open garden, unless you live in an exposed situation, when the plant had best be treated as a half-hardy annual, only that it lives over the winter and flowers the second year. Like *Salvias* in general it requires a light sandy, loamy soil, and when grown in-doors, an abundance of light and air.

ANEMONE VITIFOLIA var. HONORINE JOBERT.—Messrs. E. G. Henderson and Son inform us that the Floral Committee awarded them the prize for this flower, and not to Messrs. Smith. We received our list from the Floral Committee.

NAMES OF FRUIT (Rev. Dr. Binney).—1, Marie Louise; 2, Beurre d'Arenberg; 3, Beurre Diel; 4, Winter Nells; 5, Beauty of Kent; 6, Paeze Colmar; 7, Gansel's Bergamot, this is evidently from a standard; 8, 9, and 10, unknown. (E. Meachen).—No. 1, quite rotten, appears to be a very worthless variety, which should be regraded; 2, Louise Bonne of Jersey.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (E. M.).—Your large plant is commonly called Ground Ivy, also Gills, Ale-hoof, Turn-hoof, and Cat's-foot. Its botanical name by most authors is *Glechoma hederacea*; but Bentham calls it *Nepeta Glechoma*. The other little plant is commonly called the Ivy-leaved Toadflax, or Oxford-weed, and botanically *Linaris cymbalaria*. (Subscriber since 1866).—*Hippocrepis equestris*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY EXHIBITIONS.

WHEN this is in our readers' hands the Crystal Palace Show will be in progress. We hope no amateur will miss the opportunity of seeing it. It is the place of places for a pleasure show, and we are glad to see exhibitors are alive to its merits. The competing pens are 1002, an excess of 230 over last year. Our report next week will, we hope, treat of successes and congratulations. We can but think the alteration in time that has done away with the clashing of this Show with the respected mother of all Shows at Birmingham was a very wise one, and we hope it will be for their mutual benefit.

We receive many communications from friends lamenting the lack of shows in the south and south-west of England.

"'Tis true, 'tis pity; 'tis pity 'tis 'tis true;"

but we cannot help it. Exhibitors must go farther from home in search of foemen worthy of their steel, and with all the facilities of the present day, Birmingham is nearer to London now than Reigate was a few years since. We advise our friends to enter at Birmingham, and we warn them the entries close on the 30th of this month.

It is well worth while to try conclusions at that great Show. There are giants there if you are greedy of honour; and buyers are thick as leaves in Vallambrosa if you wish to dispose of your extra stock. A triumph there gives distinction to a yard, and it is a great satisfaction to find victories at smaller shows repeated here on a larger scale;

or if defeated, you gain that knowledge by comparison which will make success easier, if not certain, thereafter.

Our correspondence goes far to prove to us that the number of exhibitors increases, but with many there is a shyness to encounter large shows, while they are almost careless of success at smaller ones. There is no real foundation for this. The pen of Dorkings, Hamburgs, or Game, as the case may be, which has been successful over three or four others at the local or agricultural show, may possess every qualification for the silver cup at Bingley Hall. Neither should exhibitors be deterred from showing because there is a defect in one of the three birds forming the pen.

We endeavoured last week to give a scale of defects in some breeds, marking those that were disqualifications, and those that were not. Much of the importance to be attached to such a division springs from the fact that there will not probably be, among the two thousand pens of poultry shown at the Crystal Palace and Bingley Hall, one so perfect that it could challenge the Judges to find a defect or to suggest an improvement.

Some shows sell half the birds sent to them, others very few. Among the former, the Crystal Palace and Bingley Hall are pre-eminent. The Palace sells some hundreds of pounds worth; Bingley Hall makes sure of selling between seven and eight hundred pounds worth; and these sums are scattered broadcast among poultry amateurs. This is by far the most profitable manner of disposing of extra stock. We do not for a moment mean to say there is a sale for bad birds, or that it is a place to get rid of decidedly inferior ones, but average fowls in good condition put in at moderate prices meet a ready sale. Sometimes pens sent for this purpose find themselves first-prizetakers, and we shall be indeed glad if such should happen to any of our readers who may be induced to send by what we have written.

CRYSTAL PALACE POULTRY SHOW.

THIS Show commenced on the 19th and will continue till the 22nd. Beneath we give a list of the prizetakers in the various classes, and will give in our next issue the names of the owners of commended pens, as well as a detailed report.

SPANISH CHICKENS (Cockerel and two Pullets).—First, D. Parsley. Second, J. Biggar. Third, E. T. Holder.

SPANISH (Cockerel and one Pullet).—First, D. Parsley. Second, H. C. Mobbs.

SPANISH COCKS.—First and Second, D. Parsley. Third, C. Cayford.

DORKINGS (Coloured, Cockerel and two Pullets).—First, H. R. Seymour. Second, Capt. W. W. Hornby. Third, Viscountess Holmesdale. Fourth, Mrs. F. Blair.

DORKING (two Pullets).—First, W. Dolby. Second, Mrs. F. Blair.

DORKING (White, Cockerel and two Pullets).—First, Rev. G. F. Hodson. Second, Lady Mary Legge.

DORKING COCKS (Coloured and White).—First, C. Priest. Second, Miss Wilcox. Third, Mrs. F. Blair.

COCHIN-CHINA (Cinnamon and Buff, Cockerel and two Pullets).—First, Viscountess Holmesdale. Second, T. Boucher. Third, C. T. Bishop.

COCHIN-CHINA (Brown and Partridge).—First, T. Stretch. Second, Rev. G. F. Hodson. Third, R. Adams.

COCHIN-CHINA (White).—First, Viscountess Holmesdale. Second, G. Chas. Cock (Coloured and White).—First, J. Wright. Second, C. H. Wakefield.

BRAMA POOTRA.—First, W. L. Barelay. Second, Mrs. Blair. Cock.—First and Second, C. Priest.

GAME (White and Pies).—First, W. Burgess. Second, Miss Crawford. Third, A. Ewen.

GAME (Black-breasted Reds).—First, J. Stubbs. Second, Rev. G. S. Cruwys. Third, S. Matthew.

GAME (Brown-breasted and other Reds, except Black-breasted).—First, J. Wood. Second, T. Moss. Third, A. B. Dyas.

GAME (Duckwing and other Greys and Blues).—First, W. Pares. Second, W. T. Everard. Third, T. Dyson.

GAME (Any variety).—First, W. Dawson. Second, J. Fletcher.

GAME COCKS.—First, J. Stubbs. Second, S. Matthew. Third, J. Cock.

HAMBURGERS (Golden-pencilled).—First, N. Barts. Second, W. H. Dyson. Third, Captain Pares.

HAMBURGERS (Silver-pencilled).—First and Third, Viscountess Holmesdale. Second, J. Robinson. Cock (Gold or Silver-pencilled).—First, Capt. Pares. Second, H. Beldon.

HAMBURGERS (Golden-spangled).—First, J. Ellis. Second and Third, Brook. (A remarkable class.)

HAMBURGERS (Silver-spangled).—First, E. Collings. Second, T. Craven. Third, J. Fielding. Cock (Gold or Silver-spangled).—First, H. Beldon. Second, J. Dixon.

POLANDS (Black, with White Crests).—First, J. Smith. Second, H. Carter.

POLANDS (Gold).—Prize, J. Dixon.

POLANDS (Silver).—First and Second, G. C. Adkins.

POLAND COCKS.—First, J. F. Edwards. Second, J. Dixon.

FLAMANDS.—First and Second, N. Sykes, jun.

ANY OTHER DISTINCT BREEDS.—First, J. Hope (Black Hamburgs). Second, Mrs. F. Blair (Flecks). Third, G. H. Wakefield (Chamois).

BANTAMS (Gold-laced).—First, T. H. D. Bayley. Second, M. Lena, jun.

BANTAMS (Silver-laced).—First, Rev. G. S. Cruwys. Second, M. Lena, jun.

BANTAMS (White, Clean Legs).—First, Miss C. H. Ballance. Second, T. H. D. Bayley.

BANTAMS (Black, Clean Legs).—First, H. Beldon. Second, R. Brotherhood, jun.

GAME BANTAMS (Black or Brown-breasted Reds).—First and Second, J. Munn. Third, Mrs. Crawford.

BANTAMS (Duckwings, or any other variety of Bantams).—First, Mrs. Crawford. Second, E. Kerrich. Third, W. S. Forrest.

BANTAM COCKS (Any variety).—First, G. Briddon. Second, J. W. Kelloway.

DUCKS (Aylesbury).—First, J. K. Fowler. Second, Sir St. G. Gore, Bart.

DUCKS (Rouen).—First, Sir St. G. Gore, Bart. Second, J. K. Fowler.

DUCKS (Black).—First, Mrs. Wolferstone. Second, Master C. A. Ballance.

DUCKS (Any other variety).—First, A. S. Yates. Second, Mrs. C. Baker.

GESEES (White).—First and Second, J. K. Fowler.

GESEES (Grey and Mottled).—First, W. Dolby. Second, Mrs. Seasmere.

TURKEYS.—First, W. Wright. Second, Rev. T. L. Fellowes.

ORNAMENTAL WATERFOWL.—First and Second, C. Baker. Third, Mrs. Baker.

PHEASANTS (Gold and Silver).—First, A. S. Yates. Second, Master R. C. Welch.

PHEASANTS (Any other variety).—First, M. Lena, jun. Second, C. Baker.

PIGEONS.

POWTERS OR CROPPERS (Cocks, any Colour).—First and Third, W. A. Baechus. Second, R. Fulton. (Exceedingly good class.)

HENS.—First, R. Fulton. Second, W. A. Baechus. Third, F. G. Stevens.

CARRIERS (Cocks, Black and Dun).—First and Second, J. C. Ord. Third, F. G. Stevens.

HENS.—First, E. L. Corker. Second, F. E. Elze. Third, Withheld.

COCKS (any other Colour).—First, F. E. Elze. Second, E. L. Corker.

HENS.—First, Withheld. Second, F. E. Elze.

DRAGONS (Blue).—Prize, F. E. Elze. Any other Colour.—Prize, —

Equilant.

ALMOND TUMBLERS.—First, E. L. Corker. Second, — Equilant. Third, F. E. Elze.

SHORT-FACED MOTTLES.—First, E. L. Corker. Second, C. J. W. Radd.

SHORT-FACED BALDEHEADS.—First, W. W. Woodhouse. Second, —

Equilant.

SHORT-FACED BEARDS.—First, J. Percival. Second, J. W. Edge.

SHORT-FACED TUMBLERS (Self-colour).—First, Mrs. Oates. Second, H. Morris.

KITES, AGATES, DUNS, AND GRIZZLES.—Prize, F. E. Elze.

JACOBIENS.—First and Second, H. Morris.

OWLS (Blue or Silver).—Prize, F. E. Elze. Yellow or any other Colour.—

Prize, F. E. Elze.

NUNS.—First, F. Elze. Second, H. Beldon.

TURBITS.—First, J. W. Edge. Second, F. E. Elze. Third, J. Ovens.

FANTAILS (White).—Prize, R. F. Jarvis. Blue.—Prize, J. W. Edge.

BARBS (Black).—Prize, F. G. Stevens. Yellow or any other colour.—

Prize, F. G. Stevens.

MAGPIES.—First and Second, F. E. Elze. Third, F. G. Stevens.

TRUMPETERS (Black Mottled).—Prize, F. E. Elze. White or any other

Colour.—Prize, F. E. Elze.

RUNTS (Spanish and Leghorn).—First, T. D. Green. Second, F. &

Stevens.

ANY NEW AND DESERVING VARIETY NOT BEFORE MENTIONED.—First,

Rev. C. Spencer. Second, H. Yardley. Third and Fourth, J. Ovens.

RABBITS.

LONGEST EARS.—First, W. Griffin. Second, J. Cranach.

BLACK AND WHITE.—First, C. Burge. Second, J. Morris, jun.

YELLOW AND WHITE.—First, Messrs. Hall & Co. Second, T. Soles.

TORTOISESHELL.—First, G. F. Greenall. Second, Miss Hawkeley.

BLUE AND WHITE.—First, C. Sallen. Second, C. South, jun.

GREY AND WHITE.—First, H. Handford. Second, J. Hales.

SELF COLOUR.—First, G. Booth. Second, G. Jones.

FOR WEIGHT.—First, J. Warner. Second, Messrs. Hall & Co.

FOREIGN.—First, J. Langham. Second, G. Buchanan.

JUDGES.—Poultry: Mr. J. Bailly, Mount Street, London,

and Mr. E. Hewitt, Sparkbrook, near Birmingham. Pigeons:

Mr. S. J. Cottle and Mr. F. Bellamy. Rabbits: Mr. A. Bancks,

Mr. T. H. Fox, and Mr. S. Webster.

EAST HANTS POULTRY SHOW.

THE Show was an uncommonly good one of its class. There were about a hundred entries; but owing to the unfavourable state of the weather on both days it was rather poorly attended.

In *Spanish* the first and second prizes went to two very good pens of young birds, the highly commended pen being pretty fair. In *Dorkings* the first prize went to a pen of Whites, young birds of Antill's old strain, and which were extremely fine. The second prize was awarded to a magnificent pen of Greys belonging to Mrs. Rothery. In the *Cochins* there were some good birds; but the noted Mr. Kelloway's birds eclipsed everything. They were in capital condition for the time of year, but hardly over their month. The commended pen was not over-good. The *Game* birds were exceedingly good. The names of the exhibitors speak for themselves; but the first prize was withheld, as they are not sufficiently good to merit it. The *Hamburgs* were very poorly shown, there being only two entries, both of chickens, but exceedingly good. The *Poles* were also poorly shown. Mr. T. Edwards was the only exhibitor. The

Any other variety class was well represented by two splendid pens of Brahmas, to which first and second were awarded. Mr. C. Coles sent some very fine Andalusian chickens, but they were too late for competition. Some very good *Bantams* were shown, the Black Red Game of Mr. Kellaway taking first prize, and the cup for the best pen in the Show. The cock is a perfect Game in miniature in every respect, and does the owner credit. Mr. Nicholson's Duckwings were very good, the cock (an old bird) having a splendid wing, in fact, a perfect Game Duckwing. Mr. Sandford showed a good pen of Brown Reds, but they arrived too late. The Single Cock class was the best in the Show. The first-prize birds were splendid. It was the same as that which took first at Islington this year. The second was also a beautiful bird. The third was likewise good. Had not the Game been so good the prizes would have been richly deserved by Mr. Edwards for Polish, and Mr. Priest for his Dorking cock, both of which were above the ordinary class.

All the Ducks were very fine; and the Geese were above the ordinary standard. The Pheasants were well represented by three good pens; and the Ornamental Waterfowl consisted of a good pen of White Call Ducks.

The Pigeons to which the prizes were awarded were good, but the rest were very inferior. The Rabbits were good.

SPANISH.—First and Second, Rev. T. R. Brownrigg, Southsea. Highly Commended, J. Eyles, Southsea.

DORKING.—First, H. M. Ford, Portsmouth. Second, Mrs. Rothery, Haslemere, Surrey.

COCHIN-CHINA.—Prize, J. W. Kellaway, Isle of Wight. Highly Commended, J. K. Fowler, Aylesbury.

GAME.—Second, M. Billing, Jun., Gravelley Hill, Birmingham. First withheld. Highly Commended, H. Adney, Lympstone, Devon.

HAMPSHIRE.—First and Second, G. W. Ranwell, Portsea.

POLISH.—Prize, T. P. Edwards, Lyndhurst, Hants. Highly Commended, T. P. Edwards.

ANY OTHER VARIETY.—First and Second, C. Priest, Worthing.

BANTAMS.—First and Cup, J. W. Kellaway, Isle of Wight. Second, O. Nicholson, Fareham. Highly Commended, A. S. Yates, Alresford, Hants; J. K. Fowler, Aylesbury; M. Billing, Jun., Gravelley Hill, Birmingham.

SINGLE COCKS.—First and Cup, G. W. Ranwell, Portsea (Black Red Game). Second, M. Billing, Jun., Gravelley Hill, Birmingham (Black Red Game). Third, W. P. V. Wallis, Portsmouth (Brown-breasted Red Game). Highly Commended, T. P. Edwards, Lyndhurst, Hants (White-crested Black Poland); C. Priest, Worthing (Coloured Dorking); Rev. J. de la S. Simmonds, Winchester (Spanish); H. Adney, Lympstone, Devon (Game).

DUCKS (Aylesbury).—First and Second, Mrs. M. Seasons, Hartwell, Aylesbury. Highly Commended, W. Wilder, Cosham, Hants.

DUCKS (Any other variety).—First, J. Adams, Fareham. Second, C. Priest, Worthing. Highly Commended, Rev. D. Binney, Southampton; E. Pigeon, Lympstone, Exeter.

GESE.—Prize, J. K. Fowler, Aylesbury.

GOLD AND SILVER PHEASANTS, ORNAMENTAL WATERFOWL, &c.—First, — Bond, Bishop's Waltham. Second, A. S. Yates, Alresford, Hants. Highly Commended, W. Clark, Bishop's Waltham; A. S. Yates.

FROZES.—First, H. Bunes, Camberwell (Short-face Black Mottles). Second, A. S. Yates, Alresford, Hants (Dun Carriers). Third, R. Sutton, Deptford (Blue Pied Powters). Highly Commended, E. Pigeon, Lympstone, Exeter (Rants); E. Body, Portsmouth (Red Pied Powters).

RABBITS.—First, G. Jones, Birmingham (Fawn Doe). Second, J. Halle, Millbank (Grey and White Doe). Highly Commended, G. Jones (Fawn Doe); J. Halle (Black and White Doe, Tortoiseshell Doe).

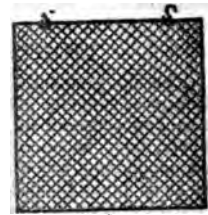
JUDGES.—Poultry.—Messrs. B. and J. Smith, of Portsea. Pigeons.—Mr. Newman. Rabbits.—Mr. R. Smith.

SMALL BIRDS AND THE POULTRY-KEEPER.

I AM very glad some one has taken up the subject of small birds on behalf of poultry-keepers; for I am convinced from my own knowledge and observation that where one keeps poultry he may catch his own caterpillars and grubs himself, the birds—I allude to the sparrows—never touching either caterpillar or grub while they can pick up corn, meal, &c. Having been considerably annoyed and plundered by these

little pilferers, which fly completely through the wires of my fowl establishment, I have manufactured the foregoing preventive, a sketch of which I enclose, as it may be of as much use to some of your correspondents as it has been to me.

Four posts, or as many as may be required, are firmly fixed in the ground. A coil of sparrow-proof wire is then wound all round, except at one end, outside these, and pegged down to the ground. A piece of wire is then placed over the top, and connected with the sides and end by twisting. The door is composed of the same wire fastened on a strong piece of wire bent into a square form, and of such a size that it shall swing easily in the aperture left for it. Two pieces of wire bent into an S are hooked to the top, and these hang on a piece of strong wire stretched tightly (for it must not bend) across the doorposts. The fowls push open the swing door to feed, and this sparrows have not strength to do; and the desideratum of feeding one's fowls and not the sparrows is also accomplished. After a little practice the fowls become used to it, but it must be left open at first to encourage them. It is quite amusing to watch the sparrows during this feeding; they perch round and on the wire, apparently loudly exclaiming against the contrivance and their swindle, and they adjourn afterwards in despair to the breakfast Nature has provided them with, and which, when corn-fed, they are too lazy to seek.—LEX.



B

RANDOM APIARIAN NOTES.

"B. & W."—I hail with pleasure the re-appearance of your excellent correspondent under this title, and should like him to give an account of the native bees of Australia. Having a near neighbour who has resided at Adelaide for thirty years and upwards, he informs me that the only drawback to the English bees which have been introduced there is, that the bees are tormented constantly by the ants, which are more numerous and of a larger size than those in England.

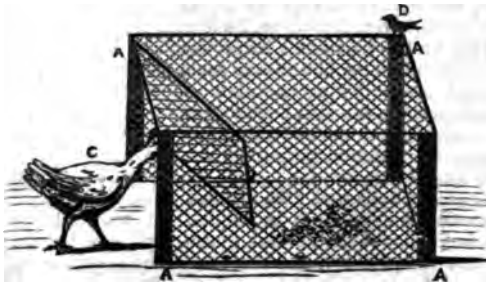
THE HAMPSHIRE BEE-KEEPER.—This gentleman is quite correct in describing the admirable bee season of 1857. It was one of a famous cycle of good years (also 1858 and 1859) which preceded the three untoward seasons of 1860, 1861, and 1862; and even amongst the mountains in North Wales, bees collected sufficient honey to maintain themselves during their long winters, after the three magnificent summers of 1857, 1858, and 1859.

PARTHENOGENESIS.—The Editors (the "head hitters," as the countryman called them), of THE JOURNAL OF HORTICULTURE, have given a very proper hint in a late Number to the writers, to be very chary of their remarks on this mysterious subject, not at all fitted for discussion, and I fully intend to reserve my opinion altogether.

TWO QUEENS AT A TIME IN HIVES.—Mr. Lowe seems to coincide with me, that at certain seasons an old and young queen may frequently be seen in one hive during the whole of the swarming season. I myself have frequently seen two queens, and once three, on the outside of nearly half a peck of bees which had lain out in most unsettled weather in June, when swarming had been retarded.

MR. WOODBURY.—I am glad that Mr. Woodbury parted with the extra queen mentioned, as her death would certainly have followed soon. At the same time, although his case seems an exceptional one, I am of opinion where large hives are separated by "supers" or other divisions, like Nutt's old boxes, it is quite possible an *imperium in imperio* might last for a couple of months after swarming time, or even much longer. Again, Mr. Woodbury shows his candour in describing the fight which took place on his sending one of the queens to Mr. Fox.

HONEYDEW.—This sweet exudation rarely comes on the trees in August except in extremely hot dry seasons, when nearly all the best honey flowers have been prematurely hastened to seed. In 1846, it appeared to be very abundant between the 10th and 30th of June; in 1859, it appeared plentiful in parts of June and July; and in the last summer, in July, as mentioned by me before. But I must own that



▲ ▲ ▲ Are the posts.
■ The door.

■ A fowl entering.
■ A disgusted and hungry sparrow

I have noticed in several seasons the wild bees (the Bombi), of various sorts have been much more eager after honeydew than the hive bees, particularly that on the young oak and beech trees.—H. W. NEWMAN, *Hillside*.

LIGHT-COLOURED POLLEN.

For the past fortnight and more I have been surprised at the great activity amongst all my stocks. Every day when the temperature of the air permitted them to leave the hives, they have, especially in the early morning, worked on something, but what I am not able to guess. They return to their hives literally covered with a very fine white powder, just as if they had been rolled in dark flour. They carry in at the same time pellets of farina of a dirty white. At first I thought they visited some flour-mill or baker's shop. I opened several, and was surprised to find the honey-bag contained a bright transparent fluid of a very high flavour. I know of no flower of any sort in bloom within a mile of my house, except some poor beds of Mignonette, which they now pass by; besides, the pollen of Mignonette is of a bright red colour. They fly in the direction of some chalk pits more than a mile away, where I have from a distance observed some yellow flowers in bloom. I shall be exceedingly glad to be informed from what this honey and farina is collected.—E. FAIRBROTHER.

[Our own bees likewise return dusted with white powder, and carrying loads of light-coloured pollen. We believe that this is the result of their labours among the great numbers of fuchsias now in bloom, from which also some honey is collected.]

AN EXPERIMENTAL APIARY.

In a former article I said that "an experimental apiary can never be a thoroughly prosperous one." In enunciating this truism, I fear that some of your correspondents have misunderstood the object I had in view in making this statement, as well as misapprehended and misapplied its meaning. I had no wish to condemn legitimate experiment, far less to put a stumbling-block in the way of science. Experiment, I know, is often the torch which lights up the dark recesses of the unexplored world, discovers and reveals to us its hidden arcana, and dissipates and dispels the mist and gloom of a thousand years. Experiment is at once the discoverer and the test of truth; it is the key which unlocks to us many a treasure in the vast storehouse of creation, and opens up to us a solution of many a *questio venata*, many a knotty problem. But experiment must not be confounded with science, nor error with truth. Experiment from the very nature of the case may be misapplied and fail in its objects and ends, and its success will always be commensurate with the knowledge which guides and directs it. A scientific apiarian and an experimental one, therefore, are not synonymous.

Do I blame Mr. Woodbury merely because he is an experimentalist? No. If I did I should be condemning myself, who, to attain certain ends and test certain theories, have often done violence to the principles of good management, and come knowingly into collision with the findings of scientific experience. So long as mystery remains a part of the natural history of the bee, experiment must be resorted to for the purpose of solving it. The means employed may not always be scientific or in accordance with nature, nor may they be promotive of the good and prosperity of the bee community; but as soon as our knowledge is complete then only shall we cease from experiment, and conduct our apiaries strictly upon scientific principles. But in the meantime it behoves us, more especially in the ordinary practical work of the apiary (and this is what I am at), to walk according to the most approved rules which experience and ascertained facts warrant. The more we do this we shall find success the greater, our pleasure and profit the larger. Knowledge here, as in everything else, is power—it is the philosopher's stone, the true alchemy that turns everything touches into gold, or, at all events, into its equivalent.

But after all is there such a difference between a merely experimental apiarian and a strictly scientific one? Let us

which may amuse, perhaps, what are called the old-fashioned apiarians, and cause some of the would-be modern class, who pursue with hot haste every phantom of novelty which crosses their path, to pause and ponder in their erratic ways. But where shall I begin? The field is so full of materials as to encumber my movements. I can only attempt to traverse a portion of it at present.

First as to domiciles. The experimentalist must try all sizes, from the giant tub of Duchatel, down to the puniest vessel which bees can be crammed into. He must also try all materials—straw, wood, glass, cork, earthenware, rushes, and sea-grass. All forms and shapes, too—the square, the oblong, the circular, the hexagonal, octagonal, pyramidal, triangular, and globular, the high and the low, the conical-topped, and the flat-topped, a unicomb, and a decemcomb, a hive crossed with sticks, and without sticks, a frame-hive, a bar-hive, a vertical frame, a horizontal frame, and a leaf-hive, a hive 6 feet high, and one 6 inches. In short, he must try all kinds of materials, all forms, shapes, and sizes. Then, having got his bees domiciled according to his fancy—say in autumn, he tries to find out what kind of food is best to feed them with. Soft sugar, lump-sugar, candy-sugar, boiled, half-boiled, raw, foreign honey, home honey variously mixed and compounded; but a favourite dose may be thus stated—honey so much, sugar and ale so much, brandy, sherry, or rum so much, with a modicum of salt, and, perhaps, a little treacle added to give the whole more "consistency."

Having discovered that his bees are afflicted with dysentery in the spring (no wonder often), he must again have recourse to the bottle, and administers a glass of gin, diluted of course. But perchance he has heard something of "burying alive," and to save himself the trouble of feeding and his bees of eating, he digs a hole in his garden at dusk, and there and then he systematically buries his hives alive, carefully covering them over with leaves, earth, &c., and there they are left to their fate; but no reviving spring returns to awaken the poor bees from their deep slumbers. Or perhaps he has read somewhere something of the effects of position and aspect and internal moisture, and having failed in the bowels of the earth he tries the regions above—he tries an altitude of 15 or 30 feet, where he thinks no damp can approach them, and there they are left as an experiment till they are thoroughly winnowed. But the experimentalist is ever changeable as the winds that blow, and fearful of the evil influences of cold winds he tries all sorts of aspects—east, west, north, south; but as this would not suit the ever-varying current of our winds, the revolving pedestal will best meet his views, and hence, like a weathercock, the floorboard will always point leeward. By this method the bees will be afforded some amusement, to say the least of it, in finding out their doorway, and the virgin queen, if they ever become possessed of one, some reason when she ventures forth for going astray. Having heard something too of the disastrous consequences of hives being exposed to the bright rays of the sun in winter, and that they eat less honey and lose fewer bees by being sited on the north side of a wall where they are in perpetual shade, he tries the experiment, and the result is duly chronicled, of course; but in this as in many things else, observation is often fallacious, "*Experientia fallax*." Then comes the spring, and he discovers that some of his hives exhibit signs of weakness, while others are more active and healthy. With the view of equalising their strength he tries the effect of transposition of sites. This, he is informed, is a capital expedient, and always attended with the best results. Well, the issue will show, though not always to the experimentalist. Having some frame-hives, it may be, he is constantly in the habit of drawing up the frames for inspection, and he is surprised to find that the queen disappears some morning, or is found a stiffened corpse before the hive. How marvellous! Some of the Germans call this a case of regicide, I believe.

But now comes the swarming season—No, not the swarming season; I should rather say the driving season. "Artificial swarming for me," says the experimentalist; "I could not be bothered with natural swarming, it is too old-fashioned—Nature must be helped." "Artificial swarming is to be preferred to natural swarming," say the Potsdam conclave of apiarians, and the sentiment is echoed by many an Englishman. The spirit of the times is for speed—it cannot wait. The old slowest system will not do

now. No: we must transport our bodies by the speed of the railway, and our thoughts by a flash of electricity. The question with the experimental apiarian is not, "Are my bees ready to swarm?" but "Am I ready to force a swarm?" Nature is tardy—she must be incited to action—she must be helped. I care nothing for natural swarming: twenty minutes' drumming is more pleasant to my ears than the aerial music of a rushing swarm." Is it really so? Can I believe it to be so? Speak out, ye lovers of nature—ye who profess to feast your eyes with delight on the beautiful landscape, whose varied charms the artist's pencil can but faintly portray, and say if artificial swarming can ever compare for a moment in this respect with natural swarming. I need not "pause for a reply;" I know your verdict. Deprive the apiary of natural swarming, and you deprive the true apiarian of his principal delight. Take away from it this exciting pleasure, and the mystical spell which has so often charmed the lovers of the bee in all ages is broken, and our minds will be brought down from the bright regions of poetry and expectancy to the mere commonplace considerations of profit and pelf.

But I must away back again to the enigmatical and the experimentalist. Ready, or not ready, he drives his swarm, and a swarm he assuredly gets, and his successes are, of course, duly recorded. But pray, Mr. Experimentalist, what of your failures? Be candid for once. Oh! but the experimentalist "does not allow of many failures." "There should be no failures." Well, be it so; I do not choose to lift up the veil as I might, nor must I be too inquisitive. The driven hive is removed to a little distance aside, and the new artificial swarm is put down on the old stance. Splendid treatment this for the old stock, whose remaining bees, I fancy, are sadly thinned-out sometimes during the following day or two by desertion! But that is nothing. Bees we are told will hatch, and grubs mature, and eggs preserve their germinating powers for several weeks in a greenhouse at a temperature of 50°, and that the grubs may there be nursed with our own hands till they quit their cells. If these things take place in a greenhouse, why not in this well-nigh deserted hive? The experimentalist by-and-by, however, discovers foul brood has been introduced somehow or other into his hives, and he is told, that though the old-school apiarians are generally much behind the present age in knowledge, yet their views of foul brood—that it is a disease, a pestilence, which originates very much like the potato disease, nobody knows how—must be received as correct, and that all new theories by whomsoever broached must be ignored altogether as erroneous. Moreover, that it is a disease of so virulent a character, as to infect brood, comb, honey, bees, and domicile, and, therefore, that the combs must be all consigned to the melting-pot, the honey carefully kept away from other bees, the domicile itself burned or laid aside for four years (would not three years and a half do?) purifying, and the bees and queen subjected to a sort of penal discipline and inanity for several days, until they are thoroughly purged of all gross and infectious matter, all which, nevertheless, may not prove effectual in extirpating the malady, and then the bees must be put into a healthy driven hive (it matters not though it has been deprived of its bees the day previous), and all will be well. "The chilled and neglected brood in all stages in this hive will suffer little or no harm for a day or so, the actual mischief being very trifling. Neither the eggs, very young brood, nor that which is sealed over, is at all injured." Say, ye scientific apiarians of this the nineteenth century, with all your experience, is it even so? Are chilled and neglected brood so removed? Tell it not to the apiarians of Scotland, who dwell in the land of the mountain and flood. Publish it not in England amidst its comparatively warmer vales and milder clime. Repeat it not in the pages of THE JOURNAL OF HORTICULTURE, whose fame on apiarian subjects is known and appreciated from Land's End to John O'Groat's. No: Decayed and abortive brood in all stages are not removed by the bees, and, consequently, must remain a permanent evil, in whichever hive they are unfortunately found.

But I must draw this already-too-long paper to a close. The field, as I said at the commencement, is too full of material to be exhausted in a few columns; besides I cannot traverse it without trampling on peoples' toes, and this is not agreeable. I therefore must forbear. My "tone and

style" are already thought by some to be too severe; and it appears, though I must receive contradiction, I must not be given to "philippic," and to "giving pokes in the side." Nor have I done so. In opposition to the old theory of foul brood I have propounded my views on the subject. It is an evil with which I have been long familiar, and I have not found its eradication at all so formidable an affair as is represented. I have found that an excision of the affected parts is sufficient; but care must be taken that it is complete. Nay, since writing these articles I have, as an experiment, totally extirpated it from a hive by thoroughly cleansing (at a considerable tax upon my patience and time), each affected cell; while both in my own apiary and in that of a friend some sixty miles distant, I have seen the evil produced again and again by a few manipulations.

Let me in conclusion assure "B. & W.," whose uplifted mask has revealed to me a more familiar name, and all others who have entered the lists with me in this *quæstio vexata*, that I had no other object to serve, no other motive to gratify, no "other interests" at heart, but the elucidation of truth and the maintenance of such sound principles of apiculture as not a little observation and experience have taught me to value, and which I have been presumptuous enough to recommend to the consideration of others; who, no doubt, desire with myself, both on economical and scientific grounds, to see the natural history of the bee and its management freed from the errors and disencumbered of the prejudices which have so long encompassed them.—J. LOWE.

PARTHENOGENESIS—DRONES—DRIVING.

THE letter from Mr. Alex. Shearer, in page 283, shows that your nautical cry of "no nearer" must be attended to by us all. If I am an unbeliever in parthenogenesis, I am one ready and willing to be convinced of the truth, and I take for granted "A DEVONSHIRE BEE-KEEPER" wishes only that the truth should prevail, and would rather be convicted of error in past opinion than continue to advance any theory that will not lead on to fact. My supposition with reference to the matter in question is, that eggs of queens or workers—if it be established that the latter lay eggs—can be rendered fertile by some other than the usual method. Eggs of fishes certainly are, and why not those of bees? I have seen drones clustering in such numbers on comb that I have imagined it possible they might deposit spawn in the bottom of certain cells, and hence a reason why eggs of virgin queens placed in those cells by workers might vivify. Has the microscope shown any difference in the eggs that produce queens, workers, or drones? I had drones hatched much earlier this year in a hive than I ever saw them hatched before, and I imagine the reason was clearly this—that I had during the year previous placed a small piece of drone-comb as a guide in a small box at the top of that hive. This small box was filled with drone-comb, and I observed that drones were always clustering in large quantities in that small box. (There were three other boxes alongside this one in which the case was different.) This year, being at the top of the hive, it was presently filled with brood, all drones, and hatched out its young much earlier than if it had been at the bottom of the hive, where drone-comb is usually made. This raises a question: Can the queen mother lay her eggs as she chooses?—queens, workers, or drones; workers, drones, queens; or drones, workers, queens, &c. The number of drones in comparison to the queen shows that Creative Wisdom must have had a reason for the disparity, so that I may be pardoned for my surmise that there must or may be some other way of accounting for their use than to suppose they all engage in fertilising the queen. If the "DEVONSHIRE BEE-KEEPER" would think this over and reply in any way I should feel obliged. I am not able to try experiments as he can and does. He may laugh at and despise me if he will; but I confess I have just tried my hand, moved thereto by the taunt of the "LANARKSHIRE BEE-KEEPER," at driving some bees for comb and honey that I desired for myself and friends; and so signally did I fail that, after half-an-hour's hammering and tapping, I was forced to give it up and fume the bees out.—A HAMPSHIRE BEE-KEEPER.

[Our Hampshire friend does me no more than justice in

believing that truth is my first object, and that if I found myself in error with regard to parthenogenesis I should lose not a moment in recanting and doing my very best to guard others against a similar mistake. No one could be more incredulous than myself when the subject was first broached; but a perusal of Von Siebold's work having convinced me that there was at least a strong case in its favour, I at once set myself to verify it by such observations as were within my reach. These soon satisfied me that the doctrine was correct, and when called upon by "INVESTIGATOR" to give a reason for the faith that was in me, I was enabled by the kind assistance of my friend Mr. J. U. Huxley, to repeat and verify sufficient of Von Siebold's microscopic investigations to place the matter beyond the possibility of a doubt.

The hypothesis suggested by "A HAMPSHIRE BEE-KEEPER," appears to have been first promulgated by Maraldi about the beginning of the last century. It was adopted and confirmed by Mr. Debray, an English naturalist, who after a long series of experiments did not hesitate to advance as a demonstrated fact, that male bees fecundate the eggs of the queen in the manner of frogs and fishes—i.e., after they are produced. This occurred in 1777, and Debray's theory appears to have reigned undisputed until his experiments were repeated and his doctrines finally exploded by the illustrious Huber in 1789. I say finally exploded, for I think few intelligent readers could have been inclined to listen to the senseless objections subsequently raised by Huish to the discoveries of Huber, or his equally senseless attempt to galvanise into life the defunct theory of Debray. The most decisive blow to any lingering remains of the doctrine of post-fecundation by drones has, however, been administered by the Ligurians, since it has been found that on the installation of an Italian queen in a hive of black bees, every young bee after the lapse of twenty-one days is a pure Ligurian, in spite of the existence of a multitude of black drones within the hive at the time.

It may be that all these particulars are as well known to my Hampshire correspondent as to myself, and if so, I ask his pardon for a digression which may, however, not be without interest to some among the readers of THE JOURNAL OF HORTICULTURE, and I will without further preface reply to the queries propounded to me.

In the first place, then, we may take it as an unquestionable fact, that under certain exceptional circumstances worker bees can and do lay eggs which are capable of hatching into drones. Setting aside the evidence of bygone apiarians from Riem downwards, it has been abundantly proved by repeated instances which have come under my own observation, to say nothing of those related by Mr. Shearer. That these eggs were not post-fecundated will become apparent when I state that not a single drone existed in the hives in which they were laid and developed. That the eggs of drone-laying virgin queens, also, are not post-fecundated is even more conclusively proved by the fact, that I have on three different occasions had them laid and hatched so early in spring that not a single drone existed in the apiary at the time, nor had one been present since the preceding autumn.

It has been established beyond a doubt that the eggs which produce queens or workers are absolutely identical, and in these, of course, even the microscope fails to detect the slightest difference. The distinction between worker and drone eggs long baffled the researches of Leuckart and the most distinguished microscopists, but was ultimately made apparent by Von Siebold, who, by a peculiarly felicitous manipulation, was enabled to demonstrate the existence of spermatozoa in the female or worker egg, whilst he proved them to be entirely wanting in those which would produce males.

The placing drone-comb in the centre of the hive or "brood-nest" is constantly resorted to by myself and other scientific apiarians when drones are wanted in early spring. Its presence in that position, combined with liberal feeding and strength in the colony, seldom or never fails in securing the desired result. This fact proves indisputably that queen bees are, like other mortals, very much the creatures of circumstances; but I doubt whether it be sufficient to raise question in their case as to the doctrine of free will.

That the Great Creator does all things well is as manifest as the multitude of bees which swarm from the hive with the

number of perfect females, as in the rest of His works. It must be remembered that a colony of bees is designed to be in all respects a self-sustaining community. The congregation of a number of stocks within a few feet of each other is an entirely artificial arrangement, and one which would probably be quite exceptional in their wild state. Take, then, what I may term the natural condition of an isolated colony, and reflect how important it is that the individual upon whose life the very existence of the community depends should peril that existence as seldom as possible in unavailing flights in search of a mate; we shall then see that what, in our shortsightedness, we may have been tempted to call a useless multitude of drones has not been created in vain, and bow down before the wisdom of that Almighty Being who holds all things small as well as great in the hollow of His hand.

When many stocks are congregated together the necessity for a great number of drones in each hive is, of course, very much diminished, and a limit may therefore be advantageously put to their production. This is readily done in frame-hives by removing most of the drone- and substituting worker-combs. The opposite result may also, as I before stated, be obtained with equal ease by the insertion of drone-combs in the "brood-nest."

I can neither laugh at nor despise my Hampshire contemporary for failing to drive a stock of bees, since by so doing I should be heaping ridicule and contumely upon my own head. Let him turn to page 52 of the twenty-first Volume of THE COTTAGE GARDENER, and enjoy as hearty a laugh as he pleases at my expense whilst he peruses a description of the failures and difficulties which attended my first attempts at driving bees. If the perusal should incite him to persevere he will doubtless (like myself), succeed in the end. If not, what would he say to my calling-in upon him whenever I next visit the metropolis by South-Western Railway, and giving him the benefit of the example in addition to the precepts of—A DEVONSHIRE BEE-KEEPER?

HONEYDEW.

LIKE "B. & W.," I am a little sceptical about the bees making much of the oak when covered with honeydew. I indeed have seen them working often on it, but I never yet saw them make themselves any heavier of it. Last year a great cry was raised amongst the apiarians here that the bees were doing well on the oaks in August; but I am sorry to say that it had only been a fly with them because they made no weight. Like "B. & W." also, I have noticed more or less of it every summer at different times; but it never continues long at a time—perhaps about three days—because it never occurs unless in very hot weather, followed by thunder-storms which wash it away. Perhaps if it remained long enough the bees might collect it. Still I am afraid it is a bad sign when they frequent the oak.—A LANARKSHIRE BEE-KEEPER.

OUR LETTER BOX.

MR. J. C. BRETHERLY, *Gedling, Nottingham*.—We are asked for information about this person.

POULTRY FOR PROFIT (A. B. C.).—As you wish for first-class birds of pure breeds, read the reports of the poultry shows and write to the prizetakers, purchase from them—pullets from one yard and cockerels from another. Cochins-Chinas and Brahma Pootras are most profitable for eggs, because by disposing of the hens annually and having early pullets in their place, you will have eggs in winter when they are dearest. For eggs and table chickens we recommend Cochins-Chinas or Brahma Pootra pullets and an adult coloured Dorking cock. Silver Grey Rabbits and the common Dove-house Pigeon are the most profitable. The skins of those Rabbits are valuable, and their bodies are good for table.

FOWLS WITH DISEASED LIVERS (M. A. M.).—The fowls are evidently suffering from disease of the liver, which at length kills them. This is often hereditary in poultry. Drive them out of the carriage-yard into the field. Keep them short of food, feed three times per day scantily. Let the food be ground oats or barleymeal, slaked with water, and scattered abroad on the grass. Kill all the old diseased birds. Save the healthy and promising hens and pullets. Do away with all the cocks running with them, and turn in fresh ones in December. This disease often arises from over-feeding, especially with meal.

COCHIN-CHINA COCKEREL (Inquirer).—The weight you mention, 9 lbs. 14 ozs., is good for a cockerel six months old. He will become heavier if healthy.

NORFOLK ORNITHOLOGICAL SOCIETY (A Subscriber).—Its exhibition should be advertised early, so that the public could exhibit their birds about it.

WEEKLY CALENDAR.

Day of Month Week.	Day of Week.	OCT. 27—NOV. 2, 1863.	Average Temperature near London.			Rain in last 24 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
27	TU	Tortoise buries.	55.1	38.8	46.9	22	46 af 6	42 af 4	58 4	30 7	15	15 59	300
28	W	St. Simon and St. Jude.	54.6	36.6	45.6	21	48 6	40 4	55 5	40 8	16	16 4	301
29	TH	Hare hunting begins.	53.8	35.1	44.5	16	50 6	38 4	20 6	43 9	17	16 8	302
30	F	Woodcock arrives.	55.2	38.2	46.7	17	51 6	36 4	11 7	39 10	18	16 12	303
31	S	Evelyn born, 1620. Gard.	54.9	38.3	46.6	19	53 6	35 4	8 8	24 11	19	16 15	304
1	SUN	22 SUN. APT. TRINITY. ALL SAINTS.	54.4	38.0	46.2	20	55 6	32 4	10 9	2 0	20	16 17	305
2	M	Kraempfer died, 1716. Bot.	54.3	37.8	46.0	16	57 6	31 4	13 10	32 0	21	16 18	306

From observations taken near London during the last thirty-six years, the average day temperature of the week is 54.6°, and its night temperature 37.6°. The greatest heat was 67°, on the 29th and 30th, 1833, and 31st, 1834; and the lowest cold, 22°, on the 2nd, 1860. The greatest fall of rain was 4.06 inch.

THE GLADIOLUS AND ITS FAILURES.



MUCH it is to be hoped that the inquiry now going on in the columns of THE JOURNAL OF HORTICULTURE regarding the disease or causes of failure in this popular flower, may lead to some practical remedy or preventive; and if every one whose bulbs have become diseased during the past season would report the particu-

lars of his case, we might then be able to ascertain if the failure has arisen from causes that are preventible, or from some constitutional debility or cause over which we have little control.

The supposition of a correspondent, "T." at page 288, is certainly not an unlikely one; indeed it is utterly hopeless to expect a good bloom—or, in fact, any bloom at all—from a bulb which has been deprived of half its juices before planting time, and the best growing period gone ere it was planted. An old Potato planted in July or August does not produce so good a crop as one put in the ground in April; and in like manner the Gladiolus, though it will flower in the same season that it is planted if the ripening of the bulb has been well perfected the year before, yet, if the planting be delayed until there is no longer time for flowering as well as perfecting the bulb, the latter cannot take place, and a flowerless growth will be the result in the following season.

On the other hand, are there not cases in which well-ripened bulbs have failed, after commencing their growth apparently under favourable circumstances, and all has gone on well until a certain period, when they dwindle and die off? If this be verified, we must look to something else as the cause of failure, and perhaps we may discover its origin and some means of prevention.

My own experience with the Gladiolus has not been such as to enable me to give a confident opinion on the causes of failure, as I have less reason to complain of it than most people; and these cases might in some measure be attributed to the unfavourable position the plants were in. I will, however, give the cases which probably will interest those who, like myself, are anxious to know why perfect success cannot always be depended upon.

In the first example, in the spring of 1861 I bought a quantity of Gladiolus gandavensis, and planted the bulbs

in a bed that had been prepared for the hardiest varieties of Indian Azaleas. It was mostly leaf mould. The situation was a dry one, and they received no artificial watering. They were planted in patches of three bulbs together amongst the other plants, some Japan Liliums being in the same bed; but these Lilies evidently wanted more moisture, although they flowered not amiss. The Gladiolus, however, flowered well, and I did not disturb the bulbs that autumn, but they remained as they were and flowered well in 1862 also. Circumstances also prevented the bulbs being meddled with last autumn, one of the principal being a carelessness whether they did well or not, as the brighter colour of G. Brencchleyensis obtained for it a decided preference, so they were left to flower the third time where they were first planted, which they did tolerably well, though evidently requiring to be taken up and replanted on other ground, as the flowers were smaller. I may observe that some of the same kind of Gladiolus had been grown elsewhere before the above were planted, but being taken up annually their case does not require to be noticed. I find, however, that G. gandavensis is much harder than G. Brencchleyensis, as some of the latter which were left out last winter in the same manner as those already spoken of either fell a prey to insects in the ground or did not possess sufficient vital power to resist the decaying influence of the long winter's damp. More than three-fourths of those left in the ground during winter failed to make their appearance in the past season. The ground, I must observe, was a deep loamy fresh soil far from being so dry as the other, at the same time not wet; in fact it was what might be called good land. The bulbs flowered well last year, and what remained flowered well again the past summer; but I imagined the bright scarlet of the original was in a measure impaired or lessened so as to be, in many of the spikes, no better than G. gandavensis. Might I ask if this has been the case elsewhere? Some other bulbs planted in another part of the garden turned out variously, some of them well, and others grew away until about the period when the flower-spike ought to have made its appearance, when they withered away. This was sometimes the case with a whole patch, or sometimes one or two bulbs would so succumb and the third flower tolerably well, which circumstance leads me to think that the disease, if it is one, is not infectious. I believe, however, that we have had fewer failures than have been met with elsewhere, but I cannot yet give a decided opinion on their cause, and have only recorded them for the benefit of others making comparisons, and whose experience I hope will duly appear in the pages of this periodical.

Although I have had some opportunities of seeing this plant at other places, I confess that I am unable to give any opinion on the subject of soils as affecting it. In the Manchester Botanic Garden I saw two excellent beds of it in the best possible health and promising to bloom well, as the spikes were well formed and some of the flowers ready to open when I saw them in August. These, I have no doubt, flowered well, I did not perceive any failures

beyond one or two which might be accidental, the general foliage still being green, and Mr. Findlay, the intelligent Curator there, justly expected they would be very gay in a few days afterwards. The soil was the dark sandy one common in the district; the situation was unfortunately too near the city for the welfare of most trees and shrubs cultivated there, and they were evidently suffering much and yearly becoming worse as the amount of coal smoke kept increasing on all sides.

The proverbially rainy character of the district had in the early part of the past season been in some degree reversed, and May, June, and July, were said to have been much drier than usual, but the situation of the *Gladiolus*-beds in the garden was not one where the plants were likely to suffer much from that cause. As I have stated, they looked well, though they fell short of the vigour and robustness of growth of another bed I saw in the same neighbourhood, but farther removed from the smoke.

At Fog Lane in the suburbs of Manchester, Mr. Cole, one of the most successful exhibitors of plants at the London and other shows, has established a nursery, and amongst other things was a bed of *G. Brencleyensis* in the most promising condition I ever saw, the foliage being a deep green to the very tips, and the knotted spikes of bloom promised to be very sturdy and thickly set. Mr. Cole attributed his success in a great measure to the application of liquid manure, which he had given at various times during the season, and there could be no doubt whatever of the beneficial effects it produced, as an adjoining bed of the same kind which had not been so treated, was much less promising although at the same time looking well. The soil was much the same as that in the Botanic Garden, a black soil containing more sand than is usually met with elsewhere, and I believe of sufficient depth to meet all the requirements of vegetation. It was certainly richer in unctuous matter than the peaty soils of some districts famed for *Rhododendron*-growing, although the latter seem not unfitted, to the growth of *Gladioli*, but I had not an opportunity of witnessing both at the same time.

More recently, however, I saw in one of the Bagshot nurseries a bed of *Gladioli*, which of course had done flowering some time and were ripening down, but they appeared to have flowered pretty well. I must confess having heard great complaints about the plant in some places, and it would be well if all the facts bearing on the cases where failures have occurred could be laid before us, and if the evil be found to arise from bulbs imperfectly ripened in the preceding season, some means may perhaps be adopted of avoiding it, for, to use an old trite saying, a knowledge of a disease is half its cure, and this case need be no exception to that rule.

J. ROBSON.

AMMONIA IN THE ATMOSPHERE OF HOTHOUSES.

The following is Mr. Thomson's reply to several inquiries upon the subject.

No doubt the atmosphere could be charged with ammonia in many ways besides that of applying guano water to the pipes, or sprinkling the surface of the soil or floors of hothouses with the same. The solution formed by pouring water on guano holds in suspension the ammonia and a very small proportion of the phosphates. The organic matter sinks to the bottom: hence the application of guano water need not be a dirty operation, there being no necessity for applying the sediment to pipes or flues, while at the same time there need be no waste, as the organic matter may be applied elsewhere as a manure. No doubt sulphate of ammonia, which is readily soluble in water, might produce the same result; so would ammoniacal water from the gas-works, from which ammonia in the very concentrated form of hartshorn is now obtained. I am inclined to think that the application of guano water is safe and wholesome as well as the least troublesome way of producing ammonia in the atmosphere of a hothouse where tender plants are grown. We apply it regularly here in our Pine-pits in a very diluted form, yet sufficiently strong to be discovered in the atmosphere of the pits reaches the olfactory bulb before the decomposition of the atmosphere.

sphere of our close hothouses is yet a field where there is much to be done. It should always be borne in mind, however, that it can only be after many experiments and long practice that any of our highly concentrated salts, such, for instance, as muriate of ammonia and hartshorn, can be applied properly and with benefit.—D. T.

NEW ROSES—No. 2.

IN resuming this subject, so fertile in grumblings and complaints as all growers for sale can bear witness, I may observe that another commentator, while viewing the subject from a different stand-point, arrived at very much the same conclusion. My object in referring to it is only to show that the same sort of feeling is pervading the minds of a great many rosarians at the present day, and that it would be a great boon if a stop could be put to this wholesale French invasion to which England is subjected every year; but the temptation is one which even our own raisers cannot resist. To have two or three *Roses*, by which, perhaps, the owner makes £200, is for any one, but especially a French nurseryman—who, whatever his Emperor may do in war, certainly does not grow *Roses* for an idea, but for a pretty good consideration—a thing which it requires uncommon virtue to resist. The day may come when a change may arise, but till then we must, I suppose, "bear those ills we have." And now to resume the revision of the lists.

GRANGER.

25. *Baronne Pelletan de Kinkelin*! beautifully shaped and imbricated; red, shaded with purple.

26. *Kate Hausburg*, cup-shaped; lively rose.

27. *Leopold Hausburg*, red, shaded with brown and purple.

28. *Louis Van Houtte*, globular; carmine rose.

29. *Sœur Oppenheim*, carmine red, shaded with purple and violet.

M. Granger is the raiser of that fine *Rose* *Maurice Bernhardin*, and I should think, therefore, knows what a good flower is; if so, then 25, albeit its outrageous name, is likely to be an acquisition. So is 26. 27 I should doubt the colour of. 28 Sounds well. 29 I should not consider much, it is hardly likely that five good *Roses* should come from the same raiser in one season.

LACHARNE.

All honour to the raiser of Charles Lefebvre, well does he deserve to have that fine *Rose* *François Lacharme* called after him; and as a modest man, as no doubt he is, he sends out but one *Rose* this year.

30. *Gabriel de Peyronney*, fiery red, shaded with violet at the centre; full, and of fine form.

I think this may be regarded as likely to be an effective *Rose*.

TOUVAIS.

31. *Centifolia Rosea*, rose colour.

32. *Jean Touvais*, purple rose, shaded with crimson.

I do not think that either of these promises much, and we never have had much from M. Touvais, so I should decidedly mark these out of the list.

PERNET.

33. *Gloire de Sacré Cœur* (what a name! who but a Frenchman would ever have thought of it?), flesh rose, shaded with red and purple.

34. *Maréchal Canrobert*, lively rose, occasionally shaded with purple.

M. Pernet's name is unknown on this side of the Channel, I think, and I should, therefore, have much hesitation in trusting his description.

OGER.

35. *Charlemagne*, lively cherry red.

36. *George Senior*, brilliant reddish-crimson.

37. *Madame Malherbe*, blooming in clusters; lively rose.

38. *Marquise de Bruges*, crimson velvety red.

39. *Michael Ange*, lively reddish-purple.

M. Oger has the singular modesty to charge only 15*s.* for his *Roses*; but as we have not had any *Roses* that I recollect of his that are worth much, I can hardly give him the credit of believing that it is all modesty and his *Roses*, therefore, will be put in my list.

DUCHER.

40. Benoit Cornet, lively red, lighter in the centre.
 41. Le Mont d'Or, shaded carmine red.
 M. Ducher is the raiser of Robert Fortune, Deuil de Prince Albert, &c., but none of his Roses have taken a high place amongst us, and I therefore feel inclined to doubt their excellence.

DAMAISIN.

42. Louise Damaisin, not very full, white; blooming in clusters.
 43. Madame Maeker, white, slightly tinged with blush. A seedling of Mère de St. Louis.
 44. Maréchal Suchet, rosy carmine; large and full.
 45. Sénateur Reveil, brilliant crimson red, shaded with dark purple.
 M. Damaisin has given us some good Roses, and we may, therefore, hope that one or two of the above may be good. 42 Seems too thin. 43, Mamma is no very great lady, and I should, therefore, look rather to 44 and 45 as the best of these; the latter especially, if description is worth anything, seems as if it would be worth growing.

LEVEQUE ET FILS.

46. Madame Derrealkx Douville, tender rose, edge of petals white.
 This is the only Rose that the raiser of that fine Rose, Duc de Rohan, has his name attached to this autumn; but I believe he sends out some others also. This hardly seems as if it would add to his reputation much.

LIABAUD.

47. Arlès Dufour, large and full, purple, shaded at the centre with violet.
 48. Madame de Canrobert, large and full; white, slightly tinged with lilac.
 Neither of these have colours that are likely to take with us, and I should not, therefore, consider them as likely to be acquisitions.

PORTEMER FILS.

49. Madame Soupert, very full, imbricated; white, slightly shaded with blush, passing to pure white.
 50. Pierre Notting, very full and globular; very dark blackish-red, slightly shaded with violet.
 Portemer is so honest a man, and so good a judge, that I should hope one if not both of these Roses would turn out to be good. 50 I fear is of too dull a colour to suit us, unless the description be intended to signify a different sort of flower to what I imagine it to be.

BOYAU.

51. Mademoiselle Adèle Launay, beautiful rose; blooming freely in autumn.
 This sounds well, and as new flowers of a rose colour are scarce, I should hope this may be an acquisition.

GONOD.

52. Vicomtesse Douglas, cupped; beautiful rose, reverse of petals silvery.
 This is another of those two-coloured Roses which I do not think will ever be favourites with us. Since I wrote my notes on Duchesse de Morny, I have received a plate of it from M. Eugène Verdier, and it does not certainly give one very enticing notions of what it is likely to prove, or alter my opinion that there ought to be no contrast between the upper and under side of a Rose.

FONTAINE PÈRE.

53. Souvenir de Maréchal Serrurier, beautiful vivid red, back of petals whitish. The same remark applies to this as to 52.

I have now waded through these long lists, and given my opinions such as they are, as I have gone along. Which, then, are likely to be the best, the *crème de la crème*? I notice that M. Margottin admits besides his own into his select list, only twenty Hybrid Perpetuals. These are Abbé Reynaud, Alpaide de Rotalier, Alphonse Belin, Amiral La Peyrouse, Baronne Pelletan de Kinkelin, Eugène Verdier, George Paul, George Prince, La Duchesse de Morny, Leopold I. Roi des Belges, Louis Van Houtte, Louise Damaisin, Madame Soupert, Maréchal Suchet, Pavillon de Pregny, Paul de la Meilleray, Pierre Notting, Sénateur Reveil,

Souvenir de Maréchal Serrurier, Triomphe de Villecrenes, and Vicomtesse Douglas. I could still further reduce this list, and look for the best amongst the following:—In Bourbons: Madame Clotilde Perrault, and Révérend H. Dombrain. In Hybrid Perpetuals: Alpaide de Rotalier, Triomphe de Villecrenes, Bernard Palissy, Maréchal Forey, George Paul, Pavillon de Pregny, Amiral La Peyrouse, Baronne Pelletan de Kinkelin, Madame Gabriel de Peyronney, Sénateur Reveil, and Madame Soupert. Time alone can tell how far wrong one is. And now a word as to *Teas*, of these there are three.

Jaune d'Or (Oger), globular, full; golden yellow:

Lays (Damaisin), sulphur yellow.

Souvenir de Madame Eugénie Pernet (Pernet & Co.), blush, shaded with rose and salmon yellow; very hardy.

All these succeed very well, especially the last. We may hope that this interesting class may receive the same good additions this season. There has not been much advance in it these last few years, and it will ever be a favourite class especially with ladies.—D., Deal.

TRENTHAM.

This magnificent residence of his Grace the Duke of Sutherland, is situated about a mile from the station of Trentham, and about three miles from that of Stoke, farther north on the North Staffordshire Railway; and close to, almost forming a part of the latter station, is a large, commodious, comfortable hotel, a matter of importance to those that may arrive late for the purpose of seeing Trentham on the following day. It is just a nice walk from Trentham station to the garden, and the visitor will be pleased to note several picturesque cottages with their flower gardens, and summer creepers mantling the walls, as he passes along.

Trentham might well be denominated "The Lily of the Valley," the building and demesne showing, in their simplest details, the refined taste of the Dowager Duchess, and the architectural and artistic touches of a Barry. The gorgeous mansion is placed on low level ground, not far from the rise of the Trent, the banks of whose waters will ever be classic earth so long as the sweet though melancholy odes of Kirke White hold their appropriate place in English hearts. The mansion is backed on the west or entrance-front by a bold undulating park, terminating in the heights by the massive Henchurch Woods. The park itself was clothed with groups of deciduous trees, relieved by masses of lofty Scotch Firs, and enlivened by deer and cattle up to their knees in herbage, the grass seeming a stranger to the great drought from which our pastures suffered further south; and it was enlivened still more by the companies of well-dressed people who have next to free access to that part of the demesne. The mansion is backed on the north by the necessary offices, and on the east by plantations and shrubberies, which thoroughly conceal the kitchen gardens and forcing grounds, though close at hand, and which are reached by an iron bridge and a ferry boat over the river. It is fronted on the south by a series of Italian gardens on different levels, occupying a space, we should judge, of about a dozen acres, and these are fronted again by a beautiful irregular picturesque lake of eighty-four acres in extent, and relieved by several islands. This lake is bounded on the east or garden side by a continuation of massive lawns and shrubberies, marked by great diversity of outline and of planting, the kept grounds extending to somewhere about eighty acres, one place showing the careful hand of the artist, and another as plainly revealing superior taste, in allowing flowers, and shrubs, and trees to contend on the principle of "natural selection" as to which shall gain the superiority. We have often seen *Clematis* and *Honeysuckle* hanging in such elegant festoons from trees on the sides of the roadway, that it would be a very difficult affair for the finest art to imitate them in their gracefulness. The lake, again, is bounded on the west by what I have always considered the chief glory in a natural point of view of Trentham—namely, a fine Oak wood rising tier above tier like the steps of a colossal amphitheatre, that amphitheatre of wood, but more varied in foliage, seemingly closing in the south side of the lake. On a high crest of this wood, to the south is placed a fine statue of the grandfather of the present Duke, after Sir F. Chantrey,



elevated on a lofty column so as to be seen from a great distance, and erected to his memory, as the inscription tells us, by a "mourning and grateful tenantry."

From the green sward around the base of that statue, kept as it ought to be with scrupulous neatness, and some hundreds of feet above the water level, you look down on the mansion and its offices, the Italian gardens, and pleasure grounds, the lake and its pretty islands, and the silvery specks of white swans sparkling on its bosom, as if you were examining the details of a map or the beauties of a favourite painting.

Southward still from this wooded hill of the monument, a large width of elevated picturesque scenery extends for miles, almost close to the town of Stone, abounding in such numbers of beautiful green lanes or drives, that the stranger could scarcely fail to lose himself in them, and so massive are the groups of Furze and the ranges of Heather of different colours, that but for these, perhaps, too well-kept drives and the luxuriant fronds of the bracken, we might have fancied ourselves wandering amid the bleak mountains of the north of Scotland. Many of the trees in this waste have been planted without any assistance from man; but much has also been done to add the beauties of diversity of foliage to the scene, by planting masses of one kind of tree in one place, and others quite different in another prominent place, though there has been much to contend with from the somewhat wild deer that conceal themselves amid the Fern, and the flocks of rabbits that keep whisking out of sight at every turn. The groups of most of the commoner trees are doing well, and fine masses of Thorns, Laurels, Hollies, and Rhododendrons, &c., are beginning to tell the effects they will produce, whilst in other places the finer of the Pine tribe, Araucarias, and Deodars are thriving delightfully. Upon such exposed heights they will have little likelihood of being injured by such frosts as those in 1860 and 1861, which destroyed so many fine specimens in the low sheltered grounds in the valley.

Amid such heights, woods, and wilds, it would be easy to fix upon beautiful situations for a castellated mansion, commanding an extended view of the surrounding landscape, that fact, as well as the strength of its position, forming a security against the sudden fray and the warlike raid. The very tame, low position of the mansion, with no views from its windows but its own rich gardens, lake, and woods, and no apparent means of defence, seem to speak to us of days of peace, progress, and an advanced state of civilisation, in which ease of access and plenty of the conveniences and luxuries of life are more considered than the means to repel a hostile attack. If, unfortunately, amid the changes of the future such an attack should ever be made, it is to be hoped that there would be no lack of defenders. The warm heart blood of the tenantry that erected the monument still courses in the veins of their sons. During the last great agitation with which our loved country was afflicted, rendered all the more distressing on account of the hardships and privations so many of the working people were compelled to endure; and when, amid the dense populations of the potteries, there were mutterings about sacking the residences of the gentry and helping themselves, to the lasting honour of all concerned be it recorded, that great numbers of these hard-fisted men from the potteries (I forget now the exact number), without receiving a hint from any one, of their own free will and accord, and without expected fee or reward, marched to Trentham and constituted themselves a guard around the demesne, so that not even an outpost and far less any of the rich treasures of rarity of beauty and of art within the mansion should be touched by the hand of the spoiler. One of the most delightful signs, day, facts, of the present day is, that so many of our nobility and gentry urged, no doubt, partly by feelings of benevolence, but chiefly by a deep impression of responsibility, are practically acting as if they thoroughly believed that the best security for their honours, and for the safety and preservation of their property, was to be found in the comforts, the contentment, the warm hearts, and the affectionate sympathies of the working people in their respective neighbourhoods.

Their meagre outline, and omitting all notice of the large waste of cultivated land held

and chiefly as respects gardening in its varied branches. I have already intimated that the kitchen garden is on the east side of the mansion, but though close at hand nothing of the latter is seen from the former, except part of a lofty open tower fully 100 feet in height. One peculiarity is, that unless when close to the walls, the kitchen garden is so banked and flanked with shrubberies, and its main walks are so skirted with flowers, that the idea of pleasure grounds is at first sight thrown over the whole. The entrance on the north-east is by massive gates with huge stone balls on the top of the pillars, and a drive through a shrubbery takes the visitor up to the gardener's house, situated near the middle of the north side of the main garden. On the south and west sides of the house is an open space of gravel enriched with raised beds, covered with Ivy, and planted with Geraniums, and centered with noble plants of *Humea elegans*. The road from the entrance goes on westward, at the back of a range of lean-to buildings, with the main range of glass houses in front, facing the sun at about half-past eleven. North of this roadway all the way from the entrance-gate, but flanked and concealed partly by shrubberies, and arrived at by crossing a brook, is a village or two of plant-houses, forcing-pits, workshops, &c. These, again, are backed by shrubberies, the cottage or children's garden, and these by shrubs and plantations, concealing the mansion and the river between until we get to it.

The garden is said to be five acres in extent, and we should imagine fully one-third of that to be under glass. We should consider it very small for the wants of such an establishment, but learned that most of the coarser vegetables were cultivated elsewhere. This permits of a greater degree of regularity and of neatness than can always be obtained in a garden where everything wanted must be grown. Whatever may be said in praise of the mansion nestled in the vale, and thus knowing but little of the huge chimneys a few miles distant, early vegetables and fruits find the disadvantage of such a low position, and in such close proximity to the river and the lake, with their attendant fogs and frosts, disadvantages which only served to whet into greater activity the abilities and genius of a Fleming, and the energy and the enthusiasm of a Henderson, without which accessories Trentham could never have held the position it now does as to its gardening. When we admire results we should also think of the difficulties that have been surmounted by drainage, superior cultivation, and never-ceasing care. But even with all these, loads of fine Rhododendrons and the finer of the Pine tribe were destroyed in 1860 and 1861, though escaping uninjured at higher elevations.—R. F.

(To be continued.)

GARDENERS' NAMES OF FLOWERS.

I was very glad to see my reverend and most able brother "D." of Deal, write as follows on the above subject:—"I am not inclined to agree with the notion that we must pronounce names of flowers as gardeners have done."

With the utmost respect, and in some cases reverence for the practical skill and scientific knowledge of gardeners, yet I humbly think it would be a retrograde day in horticulture if gardeners' pronunciation of the names of flowers were received by the classically educated as correct. There would arise this among other difficulties, "Where should the line be drawn?" If the verdict of a peer's gardener was received, why not that of his neighbour the squire's? But hall and rectory are often related, its inhabitants branches of the same family: why not, then, the word of a clergyman's gardener? Again, if so, where should we stop? I have constantly heard gardeners call the Rose "*Géant des Batailles*," "*Genty Battle*," and even (it was a beer-loving fellow) "*Johnny Bottle*." I have also heard the "*Bon Chrétien*" Pear called "*Bun Christian*." The other day a lady, very particular about the correct pronunciation of names, told me that her gardener would call "*Cyclamens*" "*Sicklyuns*," and upon asking him to give them in future their right names, he replied, "Well, ma'am, they are such '*sickly uns*' that I think it is a very good name."

Now these I at once grant are extreme cases; but surely it is right in this, as in all instances, to endeavour to raise the name standard rather than sink the standard

for the sake of men, which I fear would take place if we accepted gardeners' pronunciation. I feel sure that well-educated gardeners (and I am pleased to notice how these are increasing), will say Amen to my remarks, and feel that I am not writing anything in the least degree offensive to the gardener class. At the same time, I fear the godfathers of new plants little think of the trouble and perplexity they are causing the gardener world by giving their floral children so frequently names hard to be pronounced. Even the French Rose-growers might show a little mercy to English gardeners in this respect.—WILTSHIRE RECTOR.

PRONUNCIATION OF GLADIOLUS.

In a communication which you did me the honour of inserting, at page 250, I attempted to justify your pronouncing *Gladiolus* with the accent on the second syllable; and the authority on which I grounded my opinion was a rule given in an edition of the *Eton Latin Grammar* by T. W. C. Edwards. The correctness of that rule has not been impugned by "D.," nor by any other man that I am aware of. Will your correspondent undertake to prove its falsity, or that it is inapplicable to the word *Gladiolus*? Until that is done I must presume that the rule stands good, and that, according to it, the accent will fall on the antepenult, which is the second syllable in the word, and the word will be correctly accented as you have marked it, *Gladi'olus*.

For what reason does "D." throw the accent back on the first syllable? (By-the-by, at page 210, he calls it *gläd*, at page 296 he accents it *gläde*.) I infer that this is his rule: all derivatives follow the accent of their respective roots. Let us see. We will suppose he has a seedling Rose, the desire of every eye, and he names it "Desiderium." Now, this word comes from *dési'déro*, is he prepared to pronounce it *dési-dérium*? or in memory of a friend departed, he calls another "memoriam," will he pronounce the word *mem'oriam* because it comes from *mém'or*? Would he say *ex'üerat*, *hab'üerat*, *mu'lieris*? Would not most persons follow the rule given by Edwards, and, in each case, place the accent on the antepenult? Let us bear in mind that the question is not as to the quantity of each syllable in *Gladiolus*, but on which syllable shall the accent fall. My authority has been given, let "D." produce his, and if his prevail, I will cheerfully bow to it, and return to the pronunciation for which I stood corrected twelve years ago, and again say *Gläd'olus*. But the barbaric saddle is put quite on the wrong horse.

As you have some ambitious "Latiners" among your young gardeners (page 63), you may not think me out of place if I quote a few more sentences from Edwards' preface on Quantity and Accent. "By Quantity we are to understand the time actually devoted to the enunciation of a syllable—uttered quickly, it is said to be short; slowly, long. By Accent, a peculiar inflexion and stress of voice laid upon some one syllable of a word. In Latin, the accent falls either upon the penult or the antepenult of words: hence it follows that in all words of two syllables the stress must be on the first syllable. It would, no doubt, have been extremely amusing to the ancient Greeks and Romans to hear a word pronounced with the accent on the fifth or sixth syllable from the end, as it sometimes is in English, when in their respective tongues the antepenult, or third syllable from the end, was the very farthest from the terminational syllable that the accent was ever removed."

As I intend not to return to the subject, you might wish to ask me how I would pronounce the word, I say *Glade'olus*, not *Gladeye'olus*. By this method, whilst the accent is correctly placed, the "i" is not made long in quantity.

I trust that at least Mr. Beaton (Is he an N.B.?) will forgive me for preferring the "ee" to the "eye."—S. D. S.

SELECT ORCHIDACEOUS PLANTS.—The sixth Part of this beautiful series is now published. It contains *Aërides Williamsii*, *Dendrobium Dalhousieanum*, *Oncidium sarcoodes*, and *Cattleya superba*. Four more contrasting plants, yet all lovely, could not be brought together from among the plants of the genus. The plates and the letter-press are all that can be desired.

THE APPLICATION OF GUANO WATER TO HOT-WATER PIPES.

WOULD your correspondent Mr. D. Thomson give more precise information as to the use of guano as recommended by him in his useful and suggestive article on "Insects and the Atmosphere of Hothouses" in your Journal of October 13th? He merely says, "I mixed up a small potful of Peruvian guano and applied it regularly to the pipes, &c." Is the guano to be mixed with water only or with water and soil, and in what proportion, in what quantity, and how often applied?—COUNTRY CURATE.

[In the case of the vinery, to which reference was made in my paper on this subject, the guano was applied at about the rate of 1 lb. of Peruvian guano to four gallons of water. There was no soil used. It was applied regularly for three weeks. This, as stated, was for the destruction of a terrible attack of red spider; but when the object is simply to impart strength to vegetation it is sufficient to colour the water with the guano.]

In applying it regularly to our Pine-pits, where there are large old-fashioned pipes having a flat surface, saucers are set on the pipes and the water put into them instead of the pipes. The saucers are filled up with clear water frequently till the guano-charged water previously put into them runs over on to the surface of the pipes, and this is continued till guano is again added to the water in the saucers and the same process continued. In this case 4 ozs. to a gallon of water is perfectly safe.—D. THOMSON.]

FAILURES IN BLOOMING GLADIOLI, LILIUM LANCIFOLIUM, AND AMARYLLIS.

I HAVE to request your advice regarding some bulbs which I have failed in blooming this year. I have not seen in the *Gladioli* here the disease that has been so much complained of elsewhere; but having a number of them in pots I have found that a few of them have entirely rotted, and have left some quite healthy offsets. I have met with the same calamity in several classes of the bulb family. Can there be any fault in the treatment?

I should also like to know what can be done with some expensive *Lancifolium* Lilies and *Amaryllis*, which, though not yet beginning to fade, are yet showing no symptoms of bloom. Should I now let them become dry and go to rest, or, by keeping them moist and warm, can the season be prolonged with them?—A. W., Belfast.

[*Gladiolus*.—We suspect the drainage in the bottom of the pots has not been sufficient, or that by worms or some other cause its efficiency has been destroyed, and that, as a consequence, stagnant water about the roots of your *Gladioli* has caused them to decay. The healthy offsets which have been produced are an effort of nature to perpetuate the plants, examples of which are often met with when the parent is from some fatal cause destroyed. It is, however, by offsets or by the production of fresh bulbs at the expense of the parent that the *Gladiolus* perpetuates and multiplies itself. When *Gladioli* are grown in pots the drainage should be most carefully and efficiently performed, as all bulbous plants that make this fleshy root are very impatient of stagnant water. The soil in which they should be potted should be rich, but not grossly so, and rather light in texture than otherwise. They require during their growing and blooming season a plentiful supply of water, but they will never withstand with impunity a wet puddley condition of the soil arising from insufficient drainage or any other cause. After they are done blooming the amount of water must be gradually decreased till the soil becomes dry. This is to imitate as nearly as possible the wet and dry seasons to which the plant is exposed in its native habitat.]

Lilium lancifolium.—It is presumed that these have shed their leaves by this time. The proper way to manage them after they are done flowering is to gradually withdraw water from the root till, by the time they have shed their leaves, the soil in which they are growing becomes comparatively dry, but not mealy dry, so to speak; we have always found the bulbs in a more fresh and healthy condition when just kept a little moist all winter than when allowed to become very dry. They can be wintered anywhere where frost

perennials, and well worth cultivating for their reed-like habit. They grow in the water.

CAREX.—*C. Davalliana* and *C. dioica* are curious, dwarf, grass-like plants. *C. pulicaris* and *C. pauciflora* are also curious taller-growing Sedges; and *C. paniculata* attains the height of 3 feet, very commonly having stem-like crowns several inches high, from which the leaves droop gracefully. Sedges are a numerous family. Some of them are highly ornamental on the margin of water, the taller species especially.

LITTORELLA LACUSTRIS has oval leaves, and white flowers from June to August. It is a small, delicate-looking British plant, growing on the margin of sandy pools, and is a perennial.

ZIZANIA.—*Z. aquatica* (Canada Rice), is an annual, strong-growing, reedy plant with green inflorescence from July to September. It grows 6 feet in height. *Z. miliacea* has the habit of Millet, and grows 4 feet high. *Z. fluitans* grows also 4 feet high. All are annuals from North America.

NAJAS MAJOR is another curious annual. Europe generally.

MYRIOPHYLLUM (Water Milfoil).—*M. spicatum* and *M. verticillatum* are pretty native perennials, growing 1 foot high in ditches and ponds. They have respectively red and green flowers in July and August.

CERATOPHYLLUM DEMERSUM and *S. submersum* are perennials and natives, but of no ornament anywhere.

SAGITTARIA (Arrow-head).—Handsome plants, belonging to the natural order Alismaceæ. *S. sagittifolia*, with arrow-shaped leaves, grows 2 feet high, and has white flowers from June to August. It is a native species, found in rivers. *S. rigida* grows a foot high. *S. natans* (Floating), and *S. latifolia*, with broad leaves, grow 1 foot high and have white flowers in July and August. They are from North America. *S. falcata*, from Carolina, grows a foot high, and has white flowers in July and August. *S. obtusifolia*, *S. graminea*, *S. heterophylla*, and *S. hastata* have white flowers, and are half-hardy perennials. The first is from China, the others are from North America. There is also *S. obtusa*, another half-hardy perennial from North America.

HYDROCHARIS MORSUS-RANÆ (Frog-bit).—A curious perennial, growing but a few inches high in our ditches. It has roundish leaves and white flowers in June and July. One of the handsomest of the small British aquatics.

STRATIOTES (Water-Soldier).—*S. aloides* has sword-shaped leaves, habit stiff and erect, with white flowers in June and July, growing 2 feet high. England; ditches.

ISOETES LACUSTRIS (Marsh Quillwort), is a curious cryptogamic plant, inhabiting the alpine lakes of Britain.

SALVINIA NATANS, a little floating plant from Italy, and **MARSILEA QUADRIFOLIA**, which is scarcely an inch high, but very curious, are both difficult to keep in a state of cultivation.

LYCOPodium HELVETICUM is an aquatic Club Moss, very curious indeed. It is from Switzerland.

OSMUNDA REGALIS (Royal Fern), is the noblest bog plant we have. It grows in shady boggy places, and does well on the margin of water. It frequently attains the height of a man. *Osmunda* is common throughout Europe.—GEORGE ABBEY.

TODMORDEN BOTANICAL SOCIETY.

October 5th—the President in the chair. The table was strewn with numerous beautiful and interesting specimens; the following were noticeable amongst phænogams: *Hibiscus Rosa-sinensis* fl. pleno, *Vinca ocellata*, *Urtica biloba*, the marginally-variegated variety of *Serissa foetida*, from Japan, beautifully in bloom, the flowers being of a snowy whiteness, *Peperomia pulchella*, *Cyclamen europæum rubrum*, *Cyperus alternifolius variegatus*, *Rondeletia speciosa major* (a most beautiful orange-and-yellow-flowered stove plant), the curious *Dorstenia contrajerva*, and a fine example of the noble *Tritoma Burchelli*. Why is it that, in gardens, one so rarely meets with this splendid flowering-plant, so effective in summer for purposes of display out of doors, and so interesting in itself?

But at the table of the Botanical Society the *bonnes touches* are reserved for the cryptogamic botanist. Fine specimens of the Filices named below drew general attention,—viz.,

Nothochlæna trichomanoides, the very rare *Mohria achilleaefolia*, the new *Gymnogramma Lauchæana*, *Scolopendrium vulgare marginato-fissum*, *S. v. bimarginato-cordatum*, *S. v. sagittato polycuspidis*, *Athyrium Felix-femina coronans*, *A. f. grandiceps*, *Ceterach officinarum crenatum* (County Clare) and *Polypodium vulgare multiflorum*, the last named plant having been gathered, in splendid examples, by the Secretary during a recent tour in North Lancashire.

Mr. H. Halstead, of Bacup, exhibited two new varieties of *Lastrea montana*, recently gathered by him in the neighbourhood of Luddenden.

The following communications, from honorary members and others, had been received by one or another of the officers since the last meeting of the Society:—From Dr. O'Brien, of Ennis (Ireland), in regard to the discovery of *Polystichum lonchitis* on limestone rocks in County Clare; from G. Martyn, Esq., Gregans Castle, Ballyvaughan (Ireland), on the pteridology of parts of Clare; from Mr. William Hobson, Philadelphia, U.S.A., giving a list of the North American Filices growing within twenty miles of Philadelphia; from C. J. Ashfield, Esq., of Preston, announcing his discovery, in the fens of Norfolk, of the very rare British flowering plant *Liparis Læselii*; from Mr. J. Sim, of Perth, in regard to British Mosses, &c.

APONOGETON DISTACHYON HARDY— WINTERING CANNA ROOTS.

In the interesting papers you have lately published on the subject of "Hardy Aquatics," I see no notice of *Aponogeton distachyon*. I am aware that in London's Encyclopædia it is mentioned as a greenhouse aquatic, blooming from May to July; but I have had it for more than ten years in a pond in my garden at Bath, where it generally blooms three times in the year. The blossom I enclose is one of the first specimens of its third blooming in this year, and it will continue to throw up its peculiarly-shaped, ivory-textured, and very fragrant blossoms until the frosts check it. It is planted in not more than 1 foot of water, it seeds freely, and sows itself in various parts of the surrounding pond, the severe winter of 1860-1 not having in the least injured it. I fancy it is not very common, as I searched for it in vain amongst the aquatics at Kew.

Could you give me any hints on the autumn and winter management of *Canna* roots? I have a bed of fine roots raised this year from seed sent me direct from India, and I shall be grieved to lose them now through mismanagement.—E. L. O.

[There are two species, *Aponogeton distachyon* and *A. angustifolium*, both hardy when planted sufficiently deep to be out of the reach of frost. One foot, however, is quite depth enough to plant them below the surface of the water. The flowers are white and very fragrant. Both are from the Cape of Good Hope. They seed freely, and soon fill shallow pools of water with self-sown plants. *A. distachyon* blooms from May to October, and *A. angustifolium* from April to October. I have seen these in no less than six places perfectly hardy, and our correspondent will perceive, on referring to the preceding page, that I have not forgotten them.

After the first frost take up the *Canna* roots and store them away in sand out of the reach of frost, like *Dahlia* roots. Pot them in February, and bring forward in a gentle heat. Gradually harden-off after growth commences, and plant out in May. Six inches of leaf mould, spread over the roots in a half-decayed state, will usually protect them from frost; but unless your climate be very mild, the plants do not flower so freely as those wintered under cover.—G. ABBEY.]

GRAHAM'S AUTUMN NELIS PEAR.—We have received from Mr. Graham some fruit of this delicious Pear, trees of which are now for sale by Mr. Standish, of Ascot and Bagshot. The fruit is rather larger than the Winter Nelis, and for richness of flavour is not surpassed by any Pear of its season. The tree, which is as yet quite young, bore this year upwards of a bushel of fruit, which was so heavy that the branches required to be supported with stakes.

LIFTING THE ROOTS OF GRAPE VINES.

I HAVE a small house of Muscats, the Grapes in which, during their early growth, are very subject to the spot, and when ripe they rot. I am certain the evil arises from the border, which I intend redraining and making of a lighter material. I should like to do it now; but the question is, Shall I injure my crop of Grapes, which is just ripe?—M. W., *Barnet*.

[The best time to lift the roots of Vines such as you describe is before the leaves cease their functions and when there is a certainty of the Vines making fresh roots before winter. This is generally in September. We would recommend you, now that the season is so far advanced, to leave them alone till about a month before you intend starting them next spring; and, as soon as you perform the operation, protect the border from cold rains, and if you can place a bed of leaves over them so much the better. The heat will assist root-action. Apart from the consideration of the fruit now on the Vines, which will suffer if the Vines are lifted now, the spring is a better time than winter to carry out your intentions.]

ROOTS AND LEAVES.

Roots in some points correspond with the mouths, and leaves with the stomachs and lungs of animals. Plants, however, differ from animals in having the principles of vitality and reproduction diffused throughout their structure: they can be propagated by several of their parts, whereas animals are solely reproduced by ova or seed. We may take away the limb of an animal in the same way as the arm or branch of a tree, and no fatal result will follow; but destroy or fail to feed the stomach of an animal and its existence terminates. This is equally true of plants in a general sense; but if we destroy the leaves no such immediately fatal results ensue. The plant has in store a quantity of dormant eyes, which are called into action when its existence is threatened. In some plants the powers of reproduction are so great that it requires nothing short of the complete destruction of every part to destroy vitality and prevent reproduction.

Although plants have such extraordinary properties of vitality and reproduction, there are two parts of their structure that must act in unison and be present in them or the subject loses its vitality. The two parts alluded to are the roots, and the stems and leaves of a plant. No plant can exist much less enlarge without them, hence their immense importance in the vegetable economy; but a plant, or some part thereof, may retain its vitality for a definite time without either. True, the leaf of a Gloxinia may contain the vitality necessary for the reproduction of the plant from which it is taken; but that cannot be called a plant, it being merely the germ of a plant, for until roots are formed nothing is present that constitutes an organic structure. The leaf, however, imbibes moisture from the atmosphere, and sends down a portion of matter which causes cellular matter to protrude from the bottom of the leaf, forming what is termed by gardeners the callosity, and, through this, ligneous fibre protrudes and appears as roots. Although the leaf has not become a plant as yet, it has, however, an organised system; the roots absorb moisture from the soil along with some of its chemical ingredients held in solution by water. The whole is transmitted upwards into the leaf, where it is exposed to the action of air and light; the crude sap is decomposed, carbon is added, and after it has become elaborated it descends and forms the tuber, or what would in the case of a ligneous plant become wood. Now that the plant has an organic system (for it has such immediately on the protrusion of roots), the removal of the roots causes the leaf to flag, and for a time delays the success of the striking. Presuming, however, that the leaf is again placed in the soil new roots will appear again from its extremity, but no enlargement of the tuber or stem (the roots of Gloxinias and Cyclamens are simply stems, and not tubers as in the case of the Hyacinth) takes place until action recommences. At the same time the leaf, by its continued existence, is doing its best to maintain the equilibrium of the system.

dependant on the stage at which the tuber has arrived. If it has attained the state of a bulb the root and leaf will be of no further use to it: therefore, the removal of either does not destroy the vitality of the bulb, although this will not attain the perfection it otherwise would have done had neither of them been removed. If, however, the leaf be removed at an earlier stage, say immediately on the protrusion of roots, the death of the part beneath the soil follows as a necessary consequence. The roots will not absorb nutrition from the soil because the part in which it is to be elaborated is not present; and until there is a digestive system no enlargement of any part takes place, and if there be no eyes or matter to form them the death of the remaining portion is a necessary consequence.

Roots, then, are necessary to the formation of leaves, and leaves must be present or no enlargement of the stem or the structure of the plant can take place.

I shall not pursue the philosophy of the roots any further, nor that of leaves, beyond giving a faint outline of their uses in the vegetable economy, for that will be found fully treated of in the "Science and Practice of Gardening."

Some years ago I received several Fig trees in pots from a nursery, and found on turning them out in order to repot, that the extremities of the roots were dead. Prior to this I had been led to attach great weight to the preservation of the spongioles, and could only account for their being dead by some injury, as frost or exposure to excessive dryness. Having some dozen plants to pot I found the same decayed state of the spongioles, and I put my Fig trees in their quarters with a presentiment that they would do little good the season following. The same season I took up a Peach tree and found that the greater part of the spongioles were dead, in some cases beyond the axillary fibres, and those that were found alive were situated at a considerable distance from the stem, and evidently were the growing points of the main roots. Those appertaining to the secondary or side branches of the roots were also incapable through decay of collecting nutriment from the soil had the condition of the plant required it. Although careful to retain as much fibres as possible, I found on spreading out the roots that there were not half a dozen fibres that had the extremities fresh or even capable of elongation. Shifting some Lime trees nearer spring, I found the fibres fresh and full of sap, though the extremities had the appearance of having been cut transversely by some sharp instrument, and beyond this point was found the skeleton of about 6 inches of the extremities of the roots. These little matters combined led to my paying more attention to roots than hitherto, and from reading an article in a contemporary, attaching great weight to the importance of preserving the extremities of the roots of deciduous trees in autumn or winter transplantation, I was led to oppose the teaching of the learned dictator in my humble way. The communication I need not say never saw the light of day, but from that time to this I have seen nothing to remove but a great deal to confirm my opinion that the spongioles are renewed annually, or the roots themselves die back for the most part between the fall of the leaf and the flow of the sap in spring. Nine out of every ten deciduous trees and shrubs with which I am acquainted, and I have seen them by tens of thousands in a nursery, have no spongiole ready to collect nutriment from the soil on the return of warmth and increased light.

There are exceptions to this rule, of which the Apricot is one; and I may say that the failure of Apricot trees in orchard-houses is more attributable to a too late top-dressing in autumn than any other cause. The Apricot emits fleshy roots in autumn, which run a long distance without sending out side branches or fibres. They remain active throughout the winter, and a quantity of small fibres are protruded simultaneously with the opening of the Apricot blossom. The Vine is another exception. It, like the Apricot, emits fleshy roots in autumn, which appear to serve no purpose beyond that of extension. Neither is their destruction of any extraordinary moment to the next year's development. Whether the Vine emits those fleshy protrusions to repair the waste that is continually going on by the stems being kept in a dry atmosphere, or for affording the means from which many minor protrusions or fibres can radiate in the succeeding summer is not for me to say, but if they are left

WORK FOR THE WEEK.

KITCHEN GARDEN.

In this department proceed with such operations as draining where required, laying Box edgings, gravelling walks, and the trenching and surface-stirring of all spare ground. Broccoli, the laying down of this useful vegetable should be attended to at this season, and to be effectually done, no part of the stem below the leaves should be left exposed, because the green part of the stem close to the leaves is much more likely to be destroyed than any other part of the plant. Besides this, there are many other things to put in a state of security; a full supply of Endive, Cardoons, Lettuce, Cauliflowers, &c., for winter use, must have protection, and what has been already stored, whether roots or fruits, should be defended from frosty air. Young plants in frames, such as Cauliflowers, Lettuce, &c., require protection, but only against frost and too much humidity: if the temperature be never less than 32°, they should not be shut up at all by day. Celery, earth-up while the weather is favourable, if severe frost should set in some long litter should be laid over the most forward crops. Where Carrots, Parsnips, Salsify, and Scorzonera, are liable to injury from grubs, or from a low, damp situation, the sooner they are taken up and stored away the better. The Beetroot to be taken up without being bruised, the tops carefully twisted off above the crown, and to be stored away in any dry place, free from frost, in sand. Onions, the autumn-sowing to be hand-weeded, and the ground slightly stirred about them. Shallots and Garlic may now be planted in light and dry soils, otherwise they had better not be put in till February.

FLOWER GARDEN.

The approach of winter calls for much precaution, as well in defending tender things against its rigour, as in planting bulbs and tubers, and dividing herbaceous plants before hard frost suspends all out-of-door operations. The display of next spring and summer depends greatly on what is already done, or doing, at this season. The present is a most appropriate season for observing the different colours, shades, and tints, that the foliage of trees and shrubs assumes. A pleasing picture could be produced, when planting, by disposing them singly or in groups, either to harmonise or contrast with each other. Chrysanthemums against walls, fences, &c., to have their shoots closely tacked in, and mats to be in readiness to protect them from the first sharp frost, which generally lasts only for a few nights. Tree leaves to be collected at every favourable opportunity, and pitted in some convenient place to rot. Leaf mould is an excellent substitute where peat soil is not easily procured, and of great service when mixed with the soil in the flower-beds, and for the culture of plants in pots. Proceed with new arrangements actively, particularly if they involve the removal and planting of trees. Now is the time for planting-out a good stock of spring flowers, especially, if a gay spring garden is required, abundance of early Tulips, and Crocus in variety. Do not forget hardy Cyclamens, these planted near the edges of borders will have a fine effect. Hepaticas, too, should be remembered; the colours, red, white, and blue, form a pleasing variety, and when they are well established they flower most abundantly. Snowdrops, Winter Aconites, and Dog's-tooth Violets, play important parts in early spring, the bloom of these comes sometimes through the snow, reminding us that the spring is returning. Standard Roses to be gone over, and all the long shoots to be shortened, reserving the general pruning to the spring. The roots of Dahlias to be allowed to remain in the ground as long as they are free from danger. Polyanthus to be examined, and soil put to the roots which are emitted from the collar; seedlings to be gone over and fastened, for when small the large earthworm often pulls them up. Pansies to be divided and planted out for next season's bloom in richly-prepared ground. The beds for Ranunculuses to be ridged up. The sooner the Tulips are planted the better, for if planting is deferred till the bulb begins to elongate the leaf-spike the roots are injured.

FRUIT GARDEN.

The planting of fruit trees, either in the open quarters or against walls, may be commenced at once. In preparing new soil for planting fruit trees, endeavour to keep it as dry as possible, and choose a dry day for planting that the soil

may be in a favourable state to facilitate the growth of fresh roots during the autumn. The present is also the most favourable time for relifting and root-pruning such trees as are too luxuriant and require checking to induce a fruitful habit. It is preferable to lift the trees entirely, unless they are very large, to cutting off the roots as they stand. Most wall trees would be more fruitful were their roots confined to borders of very limited extent, compared with what is generally the case, and by which the balance between the roots and branches would be adjusted without the trouble and expense of lifting and root-pruning.

GREENHOUSE AND CONSERVATORY.

The period has now arrived in which the increasing scarcity of flowers in the beds and borders should be compensated for by those conservatory flowers peculiar to winter, and by retarded summer things—such as Euphorbia jacquiniiflora, Gesnera zebrina, Achimenes picta, Gesnera oblongata, Linum trigynum, Plumbago rosea, Begonias, &c., all of which should have a temperature of 60° by day, rising to 80° in sunshine, and sinking to 50° at night. The Chrysanthemums and Veronicas, with Scarlet Geraniums, Heliotropes, Salvias, &c., are now interesting and useful flowers. A little gentle forcing will bring the different varieties of Epiphyllum truncatum in bloom; and with the addition of late Fuchsias, Pancratiums, Amaryllis, Mignonette, Neapolitan Violets, &c., a tolerably gay appearance may be maintained until the time when forced plants will be more generally available. Some of the most useful plants during winter and spring when subjected to gentle forcing are the different kinds of Rhododendrons, Belgian Azaleas, Kalmias, &c. As these have now perfected their buds, plants well furnished with buds can easily be selected for the purpose. When selected, to be potted in peat in as small pots as the roots can be put into; to be then watered, and placed in a pit or vinery, to be brought forward as required, beginning with a gentle moist heat, and increasing it as they progress towards blooming.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Laid down Broccoli, taking out a spit or two of soil on the north side of the stems, pressing the stem down and covering with spits of earth from the south side, so as merely to leave the head of the plant exposed and that facing the north, which will prevent the flower-head within being acted upon by a bright sun immediately after a sharp frost. The keeping the head all the nearer to the ground affords an opportunity for placing a little clean litter over it, if the frost should be severe. Did much the same with a lot of Cauliflowers, but will most likely put some under protection, as after all there is scarcely any Broccoli that eats so sweet in winter as Cauliflower. We have sometimes kept it very well by taking up the stems of the plants when the heads were a little more than half-grown—that is, we cut the plants over just above the roots, removed all the leaves except a few small ones round the head, made the stems firm in damp soil, as thick as the heads would let them stand, in a dark shed, then put 3 or 4 inches of dry sand over the moist earth, and gave air except when frosty. The last-used stems would often have roots protruding from the sand and ground. When they had been in such a position some months, the heads that were at all advanced would be apt to open and spread a little; but this could be neutralised by placing them in gold water for a few hours before taking them to the kitchen. Even if a little open they make a nice dish when cut into bits, so as to resemble Sprouting White Broccoli; and if used before much frost has partly acted on the latter, and made it sweeter and more tender, the Cauliflower will generally be the better of the two. Planted out some Cauliflowers under glasses. Potted a few to be kept under protection. Pricked out more in readiness; also pricked out Lettuces for spring use, and will lift some to put in a frame for winter use. Took up most of the Carrots, the weather being fine and mild, and the sun very strong for the season.

Cleared out most of the Cucumber-beds, as we do not care about them now. Now is a ticklish time for those plants that are to bear all the winter. In such weather as

LIFTING THE ROOTS OF GRAPE VINES.

I HAVE a small house of Muscats, the Grapes in which, during their early growth, are very subject to the spot, and when ripe they rot. I am certain the evil arises from the border, which I intend retraining and making of a lighter material. I should like to do it now; but the question is, Shall I injure my crop of Grapes, which is just ripe?—*M. W., Barnet.*

[The best time to lift the roots of Vines such as you describe is before the leaves cease their functions and when there is a certainty of the Vines making fresh roots before winter. This is generally in September. We would recommend you, now that the season is so far advanced, to leave them alone till about a month before you intend starting them next spring; and, as soon as you perform the operation, protect the border from cold rains, and if you can place a bed of leaves over them so much the better. The heat will assist root-action. Apart from the consideration of the fruit now on the Vines, which will suffer if the Vines are lifted now, the spring is a better time than winter to carry out your intentions.]

ROOTS AND LEAVES.

Roots in some points correspond with the mouths, and leaves with the stomachs and lungs of animals. Plants, however, differ from animals in having the principles of vitality and reproduction diffused throughout their structure: they can be propagated by several of their parts, whereas animals are solely reproduced by ova or seed. We may take away the limb of an animal in the same way as the arm or branch of a tree, and no fatal result will follow; but destroy or fail to feed the stomach of an animal and its existence terminates. This is equally true of plants in a general sense; but if we destroy the leaves no such immediately fatal results ensue. The plant has in store a quantity of dormant eyes, which are called into action when its existence is threatened. In some plants the powers of reproduction are so great that it requires nothing short of the complete destruction of every part to destroy vitality and prevent reproduction.

Although plants have such extraordinary properties of vitality and reproduction, there are two parts of their structure that must act in unison and be present in them or the subject loses its vitality. The two parts alluded to are the roots, and the stems and leaves of a plant. No plant can exist much less enlarge without them, hence their immense importance in the vegetable economy; but a plant, or some part thereof, may retain its vitality for a definite time without either. True, the leaf of a Gloxinia may contain the vitality necessary for the reproduction of the plant from which it is taken; but that cannot be called a plant, it being merely the germ of a plant, for until roots are formed nothing is present that constitutes an organic structure. The leaf, however, imbibes moisture from the atmosphere, and sends down a portion of matter which causes cellular matter to protrude from the bottom of the leaf, forming what is termed by gardeners the callosity, and, through this, ligneous fibre protrudes and appears as roots. Although the leaf has not become a plant as yet, it has, however, an organised system; the roots absorb moisture from the soil along with some of its chemical ingredients held in solution by water. The whole is transmitted upwards into the leaf, where it is exposed to the action of air and light; the crude sap is decomposed, carbon is added, and after it has become elaborated it descends and forms the tuber, or what would in the case of a ligneous plant become wood. Now that the plant has an organic system (for it has such immediately on the protrusion of roots), the removal of the leaf causes the leaf to flag, and for a time delays the sucking action of the roots. Presuming, however, that the leaf is again placed in the soil new roots will appear again from its extremity, but no enlargement of the tuber or stem (the roots of Gloxinias and Cyclamens are simply stems, and not tubers as in the case of the Hyacinths), takes place until root-action recommences. At this stage removal of the leaf, if the soil is kept moist, will not injure the plant.

dependent on the stage at which the tuber has arrived. If it has attained the state of a bulb the root and leaf will be of no further use to it: therefore, the removal of either does not destroy the vitality of the bulb, although this will not attain the perfection it otherwise would have done had neither of them been removed. If, however, the leaf be removed at an earlier stage, say immediately on the protrusion of roots, the death of the part beneath the soil follows as a necessary consequence. The roots will not absorb nutrition from the soil because the part in which it is to be elaborated is not present; and until there is a digestive system no enlargement of any part takes place, and if there be no eyes or matter to form them the death of the remaining portion is a necessary consequence.

Roots, then, are necessary to the formation of leaves, and leaves must be present or no enlargement of the stem or the structure of the plant can take place.

I shall not pursue the philosophy of the roots any further, nor that of leaves, beyond giving a faint outline of their uses in the vegetable economy, for that will be found fully treated of in the "Science and Practice of Gardening."

Some years ago I received several Fig trees in pots from a nursery, and found on turning them out in order to repot, that the extremities of the roots were dead. Prior to this I had been led to attach great weight to the preservation of the spongioles, and could only account for their being dead by some injury, as frost or exposure to excessive dryness. Having some dozen plants to pot I found the same decayed state of the spongioles, and I put my Fig trees in their quarters with a presentiment that they would do little good the season following. The same season I took up a Peach tree and found that the greater part of the spongioles were dead, in some cases beyond the axillary fibres, and those that were found alive were situated at a considerable distance from the stem, and evidently were the growing points of the main roots. Those appertaining to the secondary or side branches of the roots were also incapable through decay of collecting nutriment from the soil had the condition of the plant required it. Although careful to retain as much fibres as possible, I found on spreading out the roots that there were not half a dozen fibres that had the extremities fresh or even capable of elongation. Shifting some Lime trees nearer spring, I found the fibres fresh and full of sap, though the extremities had the appearance of having been cut transversely by some sharp instrument, and beyond this point was found the skeleton of about 6 inches of the extremities of the roots. These little matters combined led to my paying more attention to roots than hitherto, and from reading an article in a contemporary, attaching great weight to the importance of preserving the extremities of the roots of deciduous trees in autumn or winter transplantation, I was led to oppose the teaching of the learned dictator in my humble way. The communication I need not say never saw the light of day, but from that time to this I have seen nothing to remove but a great deal to confirm my opinion that the spongioles are renewed annually, or the roots themselves die back for the most part between the fall of the leaf and the flow of the sap in spring. Nine out of every ten deciduous trees and shrubs with which I am acquainted, and I have seen them by tens of thousands in a nursery, have no spongiole ready to collect nutriment from the soil on the return of warmth and increased light.

There are exceptions to this rule, of which the Apricot is one; and I may say that the failure of Apricot trees in orchard-houses is more attributable to a too late top-dressing in autumn than any other cause. The Apricot emits fleshy roots in autumn, which run a long distance without sending out side branches or fibres. They remain active throughout the winter, and a quantity of small fibres are protruded simultaneously with the opening of the Apricot blossom. The Vine is another exception. It, like the Apricot, emits fleshy roots in autumn, which appear to serve no purpose beyond that of extension. Neither is their destruction of any extraordinary moment to the next year's development. Whether the Vine emits those fleshy protrusions to repair the waste that is continually going on by the stems being kept in a dry atmosphere, or for affording the means from which many minor protrusions or fibres can radiate in the succeeding summer is not for me to say, but if they are left alone they often serve a great purpose without sending

WORK FOR THE WEEK.

KITCHEN GARDEN.

In this department proceed with such operations as draining where required, laying Box edgings, gravelling walks, and the trenching and surface-stirring of all spare ground. Broccoli, the laying down of this useful vegetable should be attended to at this season, and to be effectually done, no part of the stem below the leaves should be left exposed, because the green part of the stem close to the leaves is much more likely to be destroyed than any other part of the plant. Besides this, there are many other things to put in a state of security; a full supply of Endive, Cardoons, Lettuce, Cauliflowers, &c., for winter use, must have protection, and what has been already stored, whether roots or fruits, should be defended from frosty air. Young plants in frames, such as Cauliflowers, Lettuce, &c., require protection, but only against frost and too much humidity: if the temperature be never less than 32°, they should not be shut up at all by day. Celery, earth-up while the weather is favourable, if severe frost should set in some long litter should be laid over the most forward crops. Where Carrots, Parsnips, Salsify, and Scorzonera, are liable to injury from grubs, or from a low, damp situation, the sooner they are taken up and stored away the better. The Beetroot to be taken up without being bruised, the tops carefully twisted off above the crown, and to be stored away in any dry place, free from frost, in sand. Onions, the autumn-sowing to be hand-weeded, and the ground slightly stirred about them. Shallots and Garlic may now be planted in light and dry soils, otherwise they had better not be put in till February.

FLOWER GARDEN.

The approach of winter calls for much precaution, as well in defending tender things against its rigour, as in planting bulbs and tubers, and dividing herbaceous plants before hard frost suspends all out-of-door operations. The display of next spring and summer depends greatly on what is already done, or doing, at this season. The present is a most appropriate season for observing the different colours, shades, and tints, that the foliage of trees and shrubs assumes. A pleasing picture could be produced, when planting, by disposing them singly or in groups, either to harmonise or contrast with each other. Chrysanthemums against walls, fences, &c., to have their shoots closely tacked in, and mats to be in readiness to protect them from the first sharp frost, which generally lasts only for a few nights. Tree leaves to be collected at every favourable opportunity, and pitted in some convenient place to rot. Leaf mould is an excellent substitute where peat soil is not easily procured, and of great service when mixed with the soil in the flower-beds, and for the culture of plants in pots. Proceed with new arrangements actively, particularly if they involve the removal and planting of trees. Now is the time for planting-out a good stock of spring flowers, especially, if a gay spring garden is required, abundance of early Tulips, and Crocus in variety. Do not forget hardy Cyclamens, these planted near the edges of borders will have a fine effect. Hepaticas, too, should be remembered; the colours, red, white, and blue, form a pleasing variety, and when they are well established they flower most abundantly. Snowdrops, Winter Aconites, and Dog's-tooth Violets, play important parts in early spring, the bloom of these comes sometimes through the snow, reminding us that the spring is returning. Standard Roses to be gone over, and all the long shoots to be shortened, reserving the general pruning to the spring. The roots of Dahlias to be allowed to remain in the ground as long as they are free from danger. Polyanthus to be examined, and soil put to the roots which are emitted from the collar; seedlings to be gone over and fastened, for when small the large earthworm often pulls them up. Pansies to be divided and planted out for next season's bloom in richly-prepared ground. The beds for Ranunculus to be ridged up. The sooner the Tulips are planted the better, for if planting is deferred till the bulb begins to elongate the leaf-spike the roots are injured.

FRUIT GARDEN.

The planting of fruit trees, either in the open quarters or against walls, may be commenced at once. In preparing new soil for planting fruit trees, endeavour to keep it as dry as possible, and choose a dry day for planting that the soil

may be in a favourable state to facilitate the growth of fresh roots during the autumn. The present is also the most favourable time for relifting and root-pruning such trees as are too luxuriant and require checking to induce a fruitful habit. It is preferable to lift the trees entirely, unless they are very large, to cutting off the roots as they stand. Most wall trees would be more fruitful were their roots confined to borders of very limited extent, compared with what is generally the case, and by which the balance between the roots and branches would be adusted without the trouble and expense of lifting and root-pruning.

GREENHOUSE AND CONSERVATORY.

The period has now arrived in which the increasing scarcity of flowers in the beds and borders should be compensated for by those conservatory flowers peculiar to winter, and by retarded summer things—such as Euphorbia jacquiniæflora, Gesnera zebrina, Achimenes picta, Gesnera oblongata, Linum trigynum, Plumbago rosea, Begonias, &c., all of which should have a temperature of 60° by day, rising to 80° in sunshine, and sinking to 50° at night. The Chrysanthemums and Veronicas, with Scarlet Geraniums, Heliotropes, Salvias, &c., are now interesting and useful flowers. A little gentle forcing will bring the different varieties of Epiphyllum truncatum in bloom; and with the addition of late Fuchsias, Pancratiums, Amaryllis, Mignonette, Neapolitan Violets, &c., a tolerably gay appearance may be maintained until the time when forced plants will be more generally available. Some of the most useful plants during winter and spring when subjected to gentle forcing are the different kinds of Rhododendrons, Belgian Azaleas, Kalmias, &c. As these have now perfected their buds, plants well furnished with buds can easily be selected for the purpose. When selected, to be potted in peat in as small pots as the roots can be put into; to be then watered, and placed in a pit or vinery, to be brought forward as required, beginning with a gentle moist heat, and increasing it as they progress towards blooming.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Laid down Broccoli, taking out a spit or two of soil on the north side of the stems, pressing the stem down and covering with spits of earth from the south side, so as merely to leave the head of the plant exposed and that facing the north, which will prevent the flower-head within being acted upon by a bright sun immediately after a sharp frost. The keeping the head all the nearer to the ground affords an opportunity for placing a little clean litter over it, if the frost should be severe. Did much the same with a lot of Cauliflowers, but will most likely put some under protection, as after all there is scarcely any Broccoli that eats so sweet in winter as Cauliflower. We have sometimes kept it very well by taking up the stems of the plants when the heads were a little more than half-grown—that is, we cut the plants over just above the roots, removed all the leaves except a few small ones round the head, made the stems firm in damp soil, as thick as the heads would let them stand, in a dark shed, then put 3 or 4 inches of dry sand over the moist earth, and gave air except when frosty. The last-used stems would often have roots protruding from the sand and ground. When they had been in such a position some months, the heads that were at all advanced would be apt to open and spread a little; but this could be neutralised by placing them in gold water for a few hours before taking them to the kitchen. Even if a little open they make a nice dish when cut into bits, so as to resemble Sprouting White Broccoli; and if used before much frost has partly acted on the latter, and made it sweeter and more tender, the Cauliflower will generally be the better of the two. Planted out some Cauliflowers under glasses. Potted a few to be kept under protection. Pricked out more in readiness; also pricked out Lettuces for spring use, and will lift some to put in a frame for winter use. Took up most of the Carrots, the weather being fine and mild, and the sun very strong for the season.

Cleared out most of the Cucumber-beds, as we do not care about them now. Now is a ticklish time for those plants that are to bear all the winter. In such weather as

this they will bear very freely and show freely; but prudence would say, Allow hardly any fruit to swell as yet, for the more that do so the more exhausted will the plants be about the new year, when most probably they will be most required. A country and a metropolitan demand are also very different things. Amongst fashionable people Cucumbers may be often more in demand in the country in the winter than at any other time; and if wanted for home supply at that time they must be had, whatever the expense for fuel or heating material. It would be next to folly to grow at that season for the London market, as Cucumbers only come to be valuable when the parties are given in town after the assembling of Parliament—at least that used to be the case when we lived in London; and that is the answer to a correspondent who wished to supply the London market with Cucumbers in winter and lived 150 miles distant. We have no data by which to judge of the consumption of Cucumbers in winter in the metropolis: but judging from the price at which they then sell, and the high price in February, March, and April, we come to the conclusion that there must be only a limited demand in winter.

The fine sunny days that have taken place have swelled our late Dwarf Kidney Beans wonderfully, and there is now abundance under the protection of some old sashes and frigidome, from seeds sown in the open ground. Cleared away a portion of the leaves from Sea-kale, to get it to rest more quickly, and mowed down part of Asparagus that was getting brown. Artichokes (Globe) in over-stiff soil are still bearing freely, and before much frost comes we will put litter round the stems to make all safe. Several times during the season we have tasted these rough-looking customers and cooked in different ways, and the decision to which we came was that, though very nice, they were a good deal like flint soup that was none the worse for a little meat, rich gravies, and the best of spices. However, the Artichoke is more than ever becoming a fashionable dish, cooked in various ways; and if the gardener wishes to be sure, he had better protect his plants if not with litter, which we think advisable, at least by moving the surface of the soil and throwing some spadefuls of earth, in a crumbly state, round the stems. If the ground in which a plantation is to be made (and now is a good time, and the very moving will deprive the frost of its power), is well trenched and stagnant water prevented, the yield in summer will be greatly increased by giving abundance of manure water. When so treated the fruiting stems branch out with young fruit amazingly. We have seen recommendations to cut down the stems when the first heads are removed; but this we consider wasteful practice, as, with due nourishment, plenty of heads will come from every joint on the stems. Jerusalem Artichokes may either be taken up or left in the ground. We never yet knew them to be injured by frost. Now would be a good time to make fresh plantations in rows 1 yard apart, and 1 foot apart in the rows. We look upon them as most valuable as covers for pheasants. The heads make good cover, and the roots are dug up by the birds and relished in winter. The Mushroom spawn out of doors, covered with litter, is doing well, and will want moving in order to take out what is done and leave what is imperfectly done a little longer. Full details of making, &c., were lately given. The crops in the open shed are still good, and the spawn is running nicely in the first piece in the Mushroom-house, showing little bits like pin-heads. As we have put a lot of manure in the house for successions in winter, and the weather is so warm, the house at present is left open day and night. Our house is a very simple one. A bed on each side on the ground, or below the ground level, and a shallow bed on the top of the above. These make altogether some seven or eight successions. The upper shelves are generally filled with the beds below, and assist them with warmth. They are spaced out, and the mixed successions are about the same. The lower beds are well heated with the spawn, and the sheep-droppings are placed in the middle of the bed, and the small pieces of manure are placed in the corners.

leaves from Cherries, Apricots, Figs, and Peaches, pruning roughly all trees on walls and bushes, as Pears, Apples, Currants, &c., finishing clearing Strawberry-beds, making preparations for planting as previously reported, giving plenty of air in fine days to late Grapes and a little at all times. Gathering the last of the fruit and looking after that in the fruit-room, and we are sorry to say that Pears are ripening too fast, and not keeping so well as we expected. Vines commenced forcing must go on slowly. Now is the best time to replant or lift the roots of fruit trees that are too luxuriant to be fruitful. Early Vines that had shanked fruit from deep borders should now have their roots raised nearer the surface into fresh soil and drainage be attended to. Figs outside will soon want a little protection. Routine much the same as previous weeks.

ORNAMENTAL GARDENING.

The flower garden would yet be beautiful but for the leaves, which no cleaning will prevent being spread over the lawn. There are beds of Excellence Geraniums as fine as ever a bed could be in August; huge rows of scarlet *Salvia fulgens*, some 3½ feet in height, and rather more across—dense masses of scarlet, than which scarcely anything can be more showy after August, but the tree leaves, yellow and all colours that strew the ground earlier this season than usual, spoil all the charm by their reminders of desolation and decay. We have as yet only taken up a few things, but will take up a few of the best variegated Geraniums, &c., without much delay. A few particular ones we will cram singly into 60-sized pots; but the great majority we save will be taken up, all the leaves removed that are larger than a threepenny-bit, and then we will stuff them as thickly as they can stand, like faggots, either in boxes or large pots. We rather prefer young plants to these, unless when the pyramiding of beds is resorted to. The only thing we have cleared off are several large groups of Hollyhocks. We have cut them down about 6 inches from the ground, and if we find time we will daub the cut parts with a little tar, to prevent the water entering and resting there, and so injuring the roots. Of stems we had several cartloads, and we used to char them, but as at present we are scarce of fermenting material (and what there was of it was chiefly short grass, a few leaves from sweepings of the pleasure grounds, and a little litter from whence the horse-droppings had been removed, for Mushrooms, which altogether would have heated too violently like a puff, and then cooled as rapidly), these Hollyhock-stems were cut with a bill over a block into lengths of about 9 inches, and well mixed with the short grass, &c., and the whole will make an excellent heap of fermenting matter, which will retain heat for a long time. Many things taken up will be the better of a little fermenting matter, to set the roots going. Some Scarlet and other Geraniums taken up are thus helped. All the earth is shaken from the roots, the roots trimmed a little if long and straggling, and then squeezed into a small pot, all the leaves bigger than a sixpence being picked off. The soil must be neither wet nor dry, but dampish, no water given, but the tops dewed with water in a sunny day, the pots plunged into a little heat, and air left on, except when frost comes. Such plants will generally be well rooted in a fortnight, and then may have even more air. Even those placed in the faggot style in bundles would be all the better of a little heat at the roots to encourage the making of new roots before winter. Unless very scarce and valued kinds of Calceolarias, it is of little use taking up the plants, we would far prefer taking cuttings of every little bit, and placing them in a cold pit or frame. Such old plants, however, are useful for cuttings in spring; but why not make them now, when the cuttings take up no more room than the plants, if so much, and hardly one will fail if time is given them? This last is the whole secret. A Calceolaria cutting will need as many weeks to strike now in a cold place, as it would need days in spring with a little bottom heat. A little bottom heat is all well enough in spring, but if much or any is given now, its tendency will be to enervate the constitution of the future plant, and those plants struck cool in autumn will be hardier, and bear more cold, and bloom earlier than those struck in spring, because they may be planted-out much earlier. Spring-struck Calceolarias are best for autumn blooming.

As a proof of the mildness of the autumn, the Calceolarias are strikingly so. In fact, they bloom as if nearly as if

summer, whilst the rains have injured the others very much. This is the tenderest bedding Calceolaria we have met with. In some sunny days we just dusted the Calceolaria cuttings with a slight skiff from the syringe, making a quart of water, in the form more of mist than syringing, go a great way. In one very sunny forenoon, as Thursday, we gave a slight shade for a few hours. One rule is, to give no shade, if a cutting will stand light without flinching; but it is a good plan to prevent the leaves flagging, whatever plan be used. The error generally committed, is to leave shading longer on than it is required, and that tends to draw the cuttings upwards, and make them weak instead of encouraging them to root downwards.

Reported a lot of Pelargoniums that were cut down late, and had broken nicely, shaking away the most of the earth, trimming the roots a little, and repotting in fresh soil, and into the same-sized, or smaller pots. Proceeded with potting other things as we could get at them, as Cinerarias, Primulas, &c., and gave the latter more room, as they were so thick as to lose a few of the lower leaves. Would pot some stove plants, but have not as yet a place for them.

We may here remark how circumstances frequently alter cases and the treatment to be adopted. A friend of ours generally beats us in beds of Scarlet Geraniums early in the season. We as regularly beat him later in the summer and autumn; in fact in the late autumn he will tell you he has no beds. The reasons are quite on the surface. We can as yet keep no reserve ground for stock, and until late in autumn we are chary in taking even cuttings from our beds so as to mar the outline, and this we wish to keep until the leaves will spoil the lawn do what we will. October then is pretty well ended before we take up any of the finer plants we wish to keep, and frequently in fine autumns it is November. Now our friend's employers leave him in August. A ton or two of pots is no object; and no sooner are they gone than smack goes the knife in the beds for large cuttings, and ere long lots of Scarlet Geraniums are taken up, potted, and put in the open air to grow, root, and be hardened before the end of autumn, and to be wintered so as to be turned out large plants by the 20th of May. We could not house enough of these large plants if we had them, and we could not get them at present if we wished it, without injuring the appearance of the grounds when visitors are the most numerous. Those situated like our friend may plant their beds early with bulbs after giving them every necessary preparation. Those who wish bulbs to follow after such late-kept flower-beds should plant the bulbs, as previously directed, as soon as possible in a temporary border in plenty of rough leaf mould, and lift with balls and plant when the beds are ready.—R. F.

ROSE REINE DE LA PAPE.—M. Eugène Verdier gives me the following reason of this name. There is in the neighbourhood of Lyons a little hamlet named La Pape. In this village M. le Maréchal Canrobert possesses a beautiful property, and M. Guillot desired to dedicate his Rose to Madame Canrobert; but perceiving that he had been forestalled, and that another Rose of M. Liabaud's bore this name, he decided to give it the name of "Reine de la Pape" in honour of M. Canrobert, but this fact unfortunately no one knows.

COVENT GARDEN MARKET.—Oct. 24.

But little change has taken place in the supplies both from home and abroad, which still continue amply sufficient for the demand, and the prices quoted are nearly the same as those of the two previous weeks. Fruit of all kinds, both in-house and out-doors, is plentiful. Of Apples there is an abundance from the continent and the Channel Islands. Filberts are rather more scarce, but the prices remain the same. The vegetable market is well stocked, and some Kidney Beans are still to be had. Cut flowers mainly consist of Orchids, Roses, Pelargoniums, some Camellias, Verbenas, Stocks, Dahlias, Ageratums, Violets, and Mignonette.

FRUIT.

	s.	d.	a.	d.		s.	d.	a.	d.
Apples.....	½	sieve	1	6	to 4	0			
Apricots.....	doz.	0	0	0	0				
Figs.....	doz.	0	0	0	0				
Filberts & Nuts 100 lbs.	55	0	75	0	0				
Grapes, Hamburgh, lb.	1	6	5	0					
Hambro's, Foreign	0	9	1	6					
Muscats.....	3	8	6	0					
Lemons.....	100	0	14	0					
Melons.....	each	6	4	0					

VEGETABLES.

	s.	d.	a.	d.		s.	d.	a.	d.
Beans, Broad.....	bush	0	0	0	0				
Kidney.....	½ sieve	0	0	0	0				
Beet, red.....	doz.	1	0	1	6				
Broccoli.....	bundle	0	9	2	0				
Cabbage.....	doz.	0	9	1	3				
Capicums.....	100	1	3	2	0				
Carrots.....	bunch	0	6	0	8				
Caiflower.....	doz.	4	0	8	0				
Celery.....	bundle	1	6	2	0				
Cucumbers.....	doz.	6	0	12	0				
pickling.....	doz.	0	8	1	0				
Endive.....	score	1	3	2	6				
Fennel.....	bunch	0	3	0	0				
Garlic and Shallots, lb.	0	8	0	0	0				
Goards & Pumpk., each	0	0	0	0	0				
Herbs.....	bunch	0	3	0	0				
Horserradish.....	bundle	1	6	4	0				
Leeks.....	bunch	0	3	0	0				
Lettuce.....	score	2	0	2	0				
Mushrooms.....	pottle	1	0	2	0				
Must. & Cress, punnet	0	2	0	0	0				
Onions.....	bunch	0	4	0	6				
pickling.....	quart	0	6	0	8				
Parley.....	bunch	0	3	0	4				
Parasnis.....	doz.	0	6	0	9				
Peas.....	bush	0	0	0	0				
Potatoes.....	sack	5	0	8	0				
Radishes doz. bunches	1	6	2	0					
Rhubarb.....	bundle	0	0	0	0				
Savoy.....	per doz.	0	9	1	6				
Sea-kale.....	basket	0	0	0	0				
Spinach.....	sieve	1	6	2	0				
Tomatoes.....	½ sieve	2	6	4	0				
Turnips.....	bunch	0	3	0	0				

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

RIPENING GRAPES IN GREENHOUSE (A. B.).—No periodical makes greater efforts or incurs more expense than we do to give full and accurate answers to questions; but, if we remember right, though you forget, you wrote to us under the signature "W. K. J.," and we replied at page 258, giving some general suggestions, but adding that to answer all your questions would fill an entire Number of our Journal. If you will ask two or three questions on points in which you are still in doubt we shall readily return the best information we can obtain.

GLOXINIAS—TEMPERATURE AND VENTILATION OF PLANT STOVE (A Suffolk Subscriber).—If you wish the Gloxinias to flower next summer or early in autumn, the sooner their growing season is brought to a close now the better by drying them off gradually. If you do not mind their being late next season again you may keep those yet to flower in a dry stove heat and they will probably flower yet. As the bulbs become stronger you may expect larger blooms, all other things being equal. Keep the temperature of your little stove for tender Ferns, Begonias, &c., at 60° at night, and give air by day as soon as the heat rises to 68° or 70°; but do not open the ventilator and window in front both at the same time, especially on windy days, or you will create a cold draught, which such plants do not like. Sixty degrees with fire heat is heat sufficient, and during severe frosts 55° is preferable to a high temperature from an over-heated fire.

PROTECTING CAMELLIA BLOOMS FROM WET—GRAPES DAMPING OR MILDEWING (S. W. C.).—You may erect a temporary framework over your Camellias and cover it with calico steeped in oil. This will protect from wet and admit a good deal of light at the same time. It will be impossible for you to keep Grapes free from damping and mildew after this season in your vinery without any means for artificial heat. The fire in the adjoining house and leaving the door open will not be sufficient. It takes good management to keep Hamburgh Grapes in winter, even with a fire or hot-water pipes. Why not heat your house? You will then obtain better Grapes and be able to keep them. The sooner Hyacinths are potted now the better, especially if to be forced into flower early in spring. But you may leave them unpotted for two months yet and still get them to flower; but it is much better to pot at the earliest opportunity after this date.

PURPLE KING VERBENA CUTTINGS (B. B.).—From the appearance of the leaves you have sent there is no doubt you have a severe attack of mildew. With the management ordinarily pursued in the autumn propagation of Verbenas, this variety is almost invariably attacked with mildew more or less. Try what the effects of keeping them rather dry at the root and dusting them over with flowers of sulphur will be. This is your best remedy. It is now too late to strike cuttings of this sort to have any prospect of their being of much use to you. It is not too late, however, to lift some of your stubby plants and pot them in well-drained pots, using light soil and placing them in a cold but not damp frame. If you can lift with little balls of earth all the better. In striking it another year try it in a cold frame and begin early in August, and after the cuttings are rooted prick them off into light but rich soil in well-drained pans or eight-inch pots, and you will find mildew will not be so troublesome as when they are struck in hotbeds.

ROSES FOR FREEING-DOWN IN A BED (M. & L.).—Most, if not all, the Hybrid Perpetuals do well this way, and the Moss and Gallicas particularly well, while the China and Tea do not answer when pegged-down, as the shoot often ceases growing after being thus laid down, and the plant supplies its place by pushing up fresh shoots from the collar. It is needless to mention varieties, as all the Hybrid Perpetuals, excepting those which strongly partake of the Tea or China origin, do well so treated.

MOSS ON A LAWN (M. Cliff House).—During the months of February or March scratch as much of the moss off the lawn as you can with a garden rake or light close-toothed harrow, carrying the rakings away. Then sift some good dry mould through a three-quarter-inch sieve, and mixing some Grass and White-Clover seeds with the mould so sifted, give the ground a good sprinkling with it, not so much as to kill the Grass plants left on the lawn, but enough to partly destroy the moss and lay a foundation for a fresh growth of Grasses. The addition of a little soot to the mixture will, perhaps, prevent the small birds destroying the Grass seeds. When the growing season sets in your lawn will appear like a closely-sown corn field, and will want frequent rollings to get a good bottom. In general a little moss on a lawn is advantageous, and in winter is preferable to the multitude of worm casts a turf on richer ground is often infested with.

STORING AWAY ACHIMENES (*A Country Curate*).—Allow them to remain in the pots they have been grown in, which may be placed in any dry place free from frost until the time for starting them again. This is better than keeping the bulbs in a drawer after shaking the earth from them.

KITCHEN GARDEN INFESTED WITH SLUGS (*Idem*).—As you say you have used lime and soot very freely with little benefit, a slight dressing of salt may be used, or an application of gas water: may be of service, or, better still, burning or charring the surface will destroy the depredators. A very sharp winter is, however, a partial remedy, and if the ground were once or twice turned over during the prevalence of frost, it would tend to thin these pests. At the same time search out for them in all their haunts, as Box-edgings and all other permanent plants afford them shelter.

WEED ON GRAVEL WALKS (*W. J.*).—Most likely the weed you complain of is *Sagina procumbens*, which is very like *Spergula pilifera*. Shady walks are sometimes troubled with it, but as you say your edgings are of Box, it is not prudent to use salt freely. A careful application of hot water might be of service, as that would kill the surface weed and would be so much cooled ere it reached the roots of the Box as not to be likely to do them much harm. If the walk is becoming discoloured and dirty, breaking it up and turning it will be of great service, and a fresh surface will be exposed which will be less likely to be infested with weeds for a time. Of course, a good rolling will be necessary at the time of turning the walk.

ARMORY STOVE BOILER (*J. H. S.*).—Your letter was not prepaid. Upon the receipt of two postage stamps your queries will be answered.

NAMING PLANTS (*Alumnus*).—The best work to aid you is London's "Encyclopedia of Plants."

ALOCASIA LOWII (*J. G. Sim*).—Your question was answered last week. We cannot understand your question about *Cerastium tomentosum*.

BRITISH FUNGI (*Overdressed*).—Dr. Badham's book is a good authority, and illustrated with coloured plates. We are making arrangements for publishing a series of cuts with descriptions in this Journal.

TRANSPLANTING COMMON PURSE (*Half-pay*).—This is far from being a good plant to transplant, as we have known more than one case like yours when the plants all died or only a small fraction of them grew. The best way is to dig the ground and sow the seed where it is to be grown, or if you did try a few plants let them be very young, sowing some seeds beside them as well.

FAST-GROWING HEDGE (*Idem*).—Nothing grows faster than Privet, and if mixed with Quickset, which maintains a greater amount of rigidity, it makes a tolerable good fence, and will grow in any situation.

HARDY PEACHES AND NECTARINES FOR A SOUTH WALL (*Idem*).—The Barrington, Royal George, and Noblesse are good Peaches, and the Late Admirable a useful one in the autumn. The Elruge, Newington, and Red Roman are good Nectarines, and will generally succeed against a south wall. You will, however, find more information on fruit-growing in the "Fruit Gardening for the Many" published at our office, which would be forwarded to you for six postage stamps.

GLASS FOR PITS (*Baidon*).—Hartley's rough plate is the best of all glass for horticultural purposes. It prevents scorching, does not obstruct light nor heat; but for ordinary garden purposes we prefer twenty-one-ounce sheet of good quality to any other. Fluted glass is often so bad in quality that it scorches all beneath it, but when the quality is good it is as good, but no better than twenty-one-ounce sheet glass, though one is double the price of the other.

CAMELLIA BLOOMS DROPPING OFF (*A. B.*).—Sometimes from excessive moisture, or extreme dryness of the soil in which they grow; at other times for want of sufficient heat and light. Sour soil occasioned by imperfect drainage will produce the same result. We rather imagine you have neglected to water your plants in summer, which would cause the buds to lose the tissue of their parts, and now that the sap is impelled into them the buds are thrown off, because their structure cannot admit the sap. Had the plants been duly supplied with water the buds would have been kept fresh and plump, and that is what is wanted. Too much water gorges the buds with crude sap, and that will cause them to be thrown off; the flower-buds being fed and formed by the descending sap after it has been elaborated by the leaves. Too much water and a too dry soil are studiously to be avoided in Camellia culture, the soil at all times being kept neither very wet nor dry, but healthfully moist. Perfect drainage and the avoiding of sudden checks, as keeping the air very dry or very moist, much ventilation at one time and none at another, watering with tepid water one day and cold a few days after, and extremes of heat and cold, are all baneful to the Camellia's expanding or retaining its buds.

SCALE ON AZALEAS (*Idem*).—You do not say which scale it is. Correspondents would materially assist us and get a more specific reply to their communications by giving full particulars on the question asked. If it be brown scale syringe the plants with water heated to 140°, laying the pot and the plant on its side so that the water does not reach the roots. Turn the plant and syringe the plant on all sides. Then whilst the stems are wet rub them with the fingers, and when that is done syringe them with the water as before. Repeat the dose if the first is not sufficient, and if the stems are much infested brush them with Gishurst compound at the rate of 8 ozs. to the gallon of water heated to 140°. Soft soap at the same rate is equally efficacious. If it is the white scale brush the parts infested with a solution of camphor four ounces, spirits of turpentine one gill (half a pint), soft water a pint. Scotch snuff a quarter of a pound, and half a pound of sulphur. This will kill mealy bug as well as white scale, but it is not safe to apply it to the leaves. If they are much infested, pick off the infested, but do not rob the plants of too many leaves, and place the plants in a dung-frame prior to its being earthed for Cucumbers, taking care that the steam is not too rank. If the steam does not cause the eyes of water it is not too rank. In case of your having no such convenience a dung-pit nor place to make one, dandelion leaves affected with gum-bic, four ounces being steeped in a pint of water, a few days afterwards wash the stems of the plants with this decoction, and repeat the operation.

PEACHES (*Idem*).—If you have a good soil, and a good exposure, they may grow as you say. If the soil is poor, and the exposure is not so good, they may not grow so well. But we would recommend you to try a few on a gravelly soil, and see what the result is.

WINTERING GERANIUMS (*Idem*).—If you have a good soil, and a good exposure, they may grow as you say. If the soil is poor, and the exposure is not so good, they may not grow so well. But we would recommend you to try a few on a gravelly soil, and see what the result is.

ROSES FOR POT CULTURE (*J. R. M. C.*).—You will find the following kinds answer very well for the above purposes:—Anna Alexieff, Baronne Prevost, Baronne Halles, Cardinal Patrizi, Caroline de Saxe, Charles Lefebvre, Comte de Nanteuil, Coupe d'Hébé, Duchess of Sutherland, Eugène Appert, Géant des Batailles, Général Jacqueminot, Jules Margottin, La Reine, Léon des Combats, Madame Rivera, Prince Léon, Sénateur Valée, Souvenir de la Reine de l'Angleterre, and William Griffiths. These same class will answer very well also as standards, adding a few more perhaps with a greater mixture of the Tea and China breeds in their strain, as Gloire de Dijon, Enfant de Lyon, Comte de Paris, and several others, omitting, however, many of this class if the situation be an unfavourable one.

FARFUTUM GRANDE LEAF DECAYING (*H. B.*).—We see nothing wrong with the leaf, further than that it seems to be discoloured by water dripping or standing continually upon it.

GERANIUM CUTTINGS IN SMALL POTS (*Cas*).—For the sake of economising room we should keep the plants in the pots until the beginning of March next year, when we would pot them singly into 48-sized pots. If you could spare the space they would occupy, they would make better plants by being potted into small pots now, and shifted into larger in the spring. They will keep quite as well in small pots as if you potted them into larger. All that is wanted is to keep them safely through the winter, giving nothing in the shape of heat beyond that necessary to secure their safety during the winter, or increased pot-room, until growth commences in the spring.

WINTERING CALCEOLARIAS AND GERANIUMS (*Idem*).—Geraniums in a cellar must have the leaves removed, otherwise they damp the stems and cause their decay. Calceolarias need all the old growths to be removed, those that come from the neck of the plants only being preserved. They require light, but Geraniums do quite as well in the dark.

RASPBERRIES ON A LIGHT SOIL (*A Constant Reader*).—What you have done ought to have made your Raspberries very vigorous but not fruitful, for what you have done this year will not be apparent in the fruit until next. We should manure heavily, doing nothing but merely pointing it in, for digging would only injure the roots, and make the soil lighter and more open, the last causing too quick evaporation of the moisture from the soil. When they flower water freely, and when that is past, give a drenching twice a-week with weak liquid manure. This, we think, with not allowing the canes to grow too near together, nor too many from a stool, will give you a fair amount of Raspberries another year. The kind of Raspberry may have something to do with their unproductiveness. The Red Antwerp does well on light soils.

HORSERADISH CULTURE (*Idem*).—Horseradish should make first-class roots in three years after planting. It is a good plan to make a bed every year, no matter how small; and thus secure a bed three years old for one year's supply, so that four beds would be wanted. After three years it becomes woody and loses its pungency.

ANTS INVADING WALL FRUIT (*Idem*).—Dip some slater's laths in gas-tar and place these close to the wall at its bottom. Ants cannot cross this. The surest plan, however, is to kill them ere the fruit is ripe. Use arsenic and sugar in equal parts with sufficient water to make them of the consistency of cream when mixed. This will destroy them, but care must be taken to prevent other animals from partaking of it. Lime water will make them shift their quarters if it be poured into the nests, and so will guano. Boiling water poured into the nest kills all it touches, and ammoniacal liquor from the gasworks, diluted with four times its volume of water, will expel ants from their haunts if it does not kill them.

MILDEW ON VINES (*Sigma*).—We thought the destruction brought upon your Vines was by burning the sulphur. Putting a pan of water near the burning sulphur would not have saved the Vines. Sulphur must never be burned where there is a plant with a leaf or unripened shoot upon it. If you treat the Vines as we directed in our last Journal, we think you will get rid of the pest. Any of the advertisers of hot-water pipes in our Journal would serve you well. Write and ask them about what you require.

HEDGE UNDER LARGE YEW TREE (*Dorset*).—There could scarcely be a more difficult position in which to get a hedge to grow and last for a length of time than that which you describe. Both the roots and the shade and drip of such old Yews are most formidable enemies to anything that you could plant, while the trenching that would be necessary within 5 or 6 feet of the trunk of the tree could not fail to be injurious to it. Your only chance is to plant something already a good size, such as Holly or tree Box, which will remove well at the height of 4 to 5 feet. We have lately been teased with a hedge under a lot of large Yews dying out, and the only way we have been able to establish a living fence is by erecting a paling and then covering it with Ivy, which thrives better in the shade and drip and among the roots of other trees than anything else we know. If such a contrivance be considered too expensive, you might try Hollies of a good size; but we do not think they will do much good.

IODINE AND STARCH (*W. W.*).—In what part of England can that chemist live who does not know what iodine is? He certainly cannot have read any book on chemistry published later than when acetate of lead was called Saccharum Saturni. You can obtain iodine of any London chemist. It is a greyish-black substance obtained from the ashes of marine plants, and when combined with starch gives to it a fine blue colour. Its compounds are extensively used in medicine. We cannot tell you any more about the proceedings of M. Commandeur, for we published all the information we have. We should mix half a pound of starch into a paste with water, and add half a drachm of iodine in powder, mix the whole thoroughly, and put the mixture in pots under a cover in places where the slugs frequent.

HYBRID PERPETUAL AND BOURBON ROSES NOT FLOWERING (*A Reader*).—We suspect the bed of Roses to which you refer must have stagnant water about it. The plethoric mildewed growth which you describe is indicative of such a state of things. If you find on examination that the soil is wet and sour, your best way will be to lift the Roses, renovate the soil, drain the bed thoroughly, and plant them again. Roses like a stiff soil, but will not thrive in any soil where there is stagnant water about their roots.

PROPAGATING CLEMATISES (*Idem*).—The greater number of the hardy Clematises ripen their seed in England, and are easily propagated by them. They should be sown as soon as gathered, and some will come up the following spring and some will lie in the ground twelve months before they germinate. They are easily propagated from layers. Take a dry place and

GERANIUM REGALIS.—This magnificent Fern, once very abundant in Chevington Wood, is now extinct in Northumberland, from destroying this natural forest and draining. A poor amateur would feel obliged by any of your readers, who may find this plant in their locality, sending a frond bearing seed. Address, "Mr. Frond, Post Office, Morpeth."

WINTERING GERANIUMS IN A CELLAR (De Folz).—Strip every leaf off from the Geraniums, and then tie them together in bunches by the roots, three or four plants in a bunch, and hang them up in your cellar. Keep the cellar as free from damp as possible by occasional ventilation. The temperature in which Geraniums keep best in such situations is about 40°. You may also try some of them with their roots put into dry earth in boxes. But in either case strip them of all their leaves and let them be housed before their points are touched with frost. Look over them at intervals through the winter, and remove all signs of damping or decaying shoots, and dust the wounds over with hot lime.

NAMES OF FRUIT (G. M. C. Hatfield).—Your Apple is the French Crab (*W. Armstrong*).—1, Autumn Colmar; 2, Beurré d'Arenberg; 3, Marie Louise; 4, Marie Louise; 5, not known; 6, Napoleon; 7, Winter Nellis; 8, Beurré Boe. (*G. F. & S. H.*).—Your Pear is Figue de Naples. (*T. G. H.*).—1, Old English Codlin, of which we should like to have a few grates; 2, Golden Noble; 3, not known. (*E. C. W.*).—Pears.—1, Beurré de Kance; 2, not known; 3, Passe Colmar; 4, not known; 5, Downton; 6, Triomphe de Jodoigne; 7, Duchesse d'Angoulême; 8, Beurré Diel; 9, White Doyenné; 10, Thompson's; 11, Swan's Egg. **APPLES.**—1, Blenheim Pippin; 2, La Fameuse; 3, Scarlet Nonpareil.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (*W. W.*).—1, *Escallonia rubra*; 2, *Lonicera flexuosa*; 3, some *Hakea* or *Isopogon* apparently. Brown's "Forester," last edition, will give you full instructions for managing woods and plantations. (*W. R.*).—Your Passion-Flower seems to be *Passiflora ligularis*. Your seedling Geranium, as a flower, is inferior to many; of course we cannot say anything about its merits for bedding, as that depends upon its habit. (*M. D.*).—A *Solidago*, and apparently 8. proera. (*E. T.*).—*Cystopteris alpina*. (*A. Four-year's Subscriber*).—*Isoplepis gracilis*. (*D. P. A., Shrewsbury*).—*Thunbergia* or *Hexacentris coccinea*. The Fern is *Polystichum aculeatum lobatum*. (*L. E.*).—1, *Adiantum formosum*; 2, *Cytomum falcatum*; 3, *Asplenium Veitchianum*; 4, *Pteris hastata*; 5, *Pteris cretica albo-lineata*. (*Eusticus*).—Your Orchid is one of the *Odontoglossums*, but we do not recognise which. (*E. Shepton*).—What is called in gardens *Pteris crispata*, a plant of continental origin. (*W. N.*).—*Rudbeckia Neumannii*. (*Norfolk*).—Your plant is *Euphorbia lathyris*. The fruits you want are Late Admirable Peach, Red Roman Nectarine, Coe's Golden Drop or Reine Claude de Bayay Plum, and Florence or Belle Agathe Cherry.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

RELATIVE ENTRIES AT POULTRY SHOWS.

Your correspondent from Yorkshire completely bears out my letter to you after the Islington Show, as regards Brahmas in the north. Indeed, there can be no question that many of our "established" breeds do not enter nearly as well as the "cross-bred mongrels," as the Brahmas have been frequently styled. When I entered on my calculations as regards the Islington Show, I did not fancy I could have made out so good a case for them, and I am now going to test the patience, perhaps, of a few of your readers, whilst I analyse the entries of the late Sydenham Show.

At the close of the winter show last year I wrote to the Secretary, urging them, in future, to give greater encouragement to Brahmas, alluding then only to the addition of a third prize. Meantime, the Agricultural Hall Company issue their liberal prize list, in which Brahmas were most liberally treated, and it cannot be denied that they responded well to the invitation. The Sydenham authorities, however, have determined to remain "as they were;" no third prize, no fresh classes. Let me, however, first prove my case by figures, which, in this place, prove only the truth. I alter the order in which the various breeds are arranged in the Crystal Palace Schedule, and place them in the order that they have proved most profitable to the Crystal Palace Company.

Breed in Order of Value.	No. of Entries.	No. of Exhibitors.	Amount offered in Prizes.	Amount realised by Entries.	No. of Classes.
Dorking.....	166	47	£ s. d. 22 10 0	£ s. d. 31 16 0	4
Brahma.....	24	11	8 0 0	7 4 0	2
Bantams.....	65	41	22 0 0	19 10 0	7
Pencilled Hamburg.....	39	26	15 0 0	11 14 0	3
Cochins.....	44	34	21 0 0	16 4 0	4
Spangled Hamburg.....	35	25	15 0 0	10 10 0	3
Game.....	69	36	30 10 0	20 14 0	6
Spanish.....	36	28	17 10 0	10 16 0	3
Malay.....	4	2	3 0 0	1 4 0	1
Polish.....	17	10	15 0 0	5 12 0	4
Other breeds.....	19	12	5 0 0	5 14 0	

Here, the Dorking is undoubtedly much the most profit-

able to the exchequer, and evidently does not get its due allowance of prize money. The Brahmas, the only other breed that nearly approaches a repayment of the prize money, have, however, only £8 offered them in two classes, whilst the former breed has nearly three times the amount, and has four classes.

There are breeds long established, well encouraged, the Polish and Malay for instance, which very miserably repay the exchequer. The latter deserve, and must expect, unless their admirers come forward more thoroughly, to be sent back to the cold shades of the "Any other variety" class, from which limbo the Black Hamburg ought as certainly to be rescued. At Sydenham five competitors showed five pens, a greater number of entries, than in classes 18, 26, 27, and 30, and equal to Class 32, in all which classes £3 was offered, and in some a larger amount as prizes. Birmingham has this year set aside a class for them, but though apparently alive to the demands of this breed, it offers no greater inducements to Brahma-breeders than heretofore—no fresh class, no third prize, whilst the opening regulation in a spirit of self-laudation, considers "any departure from the extended prize list unnecessary."

It is impossible to say how the entries may tell there, but it is certain that as far as the Sydenham Show is concerned, justice is not meted to the Brahma, and I feel convinced that any impartial observer will bear out my judgment, if he study the catalogue. I have not taken the single cock classes separately, but there Brahmas follow the Dorking, although in the case of Cochins and Game, the prizes offered are larger. In my remarks I do not desire to detract from the merits of other breeds. Indeed, I am very interested, and showed in classes which I have here shown to be weak, numerically, both at Islington and the Palace. To see them docked of some of their offered prizes would be rather a tender spot with me, yet it would be but justice to the breeds that enter numerically stronger.

Our two large metropolitan Shows distinctly prove that the Brahmas are No. 2 as payers, whilst the experience of most who have kept them is, that in utility they are A1, being hardy, easily restrained by fences, rapid-flesh producers, early layers, and, to my eyes, but I may be partial, very handsome.

In conclusion, may I venture to say, that in your hints about selecting birds for show, you have urged points of feather, which I was sorry to see? Making large birds as the Dorking and Cochin, birds of feather, has in past years, done much injury to those breeds, and I would willingly save my pets from such a fate. I consider shape, size, and colour, to be the order of merit.—Y. B. A. Z.

JUDGES SHOULD BE ALONE.

I WAS given to understand that the public, and particularly exhibitors, are not admitted at poultry shows while the Judges are making their awards. Yet I noticed at the Poultry Show held at Crewe in connection with the Cheshire Agricultural Society on the 30th of September last, that whilst the Judge was making the awards an exhibitor entered the tent with catalogue in hand and went round the different pens with the Judge. When the public were admitted that exhibitor met the owner of a prize pen, and the following conversation took place:—

"Well Mr. — has got the first prize, and we have given you the second, and all the rest have got 'highly commended' or 'commended,' so you must consider it an honour." Now I think if he had omitted the word honour and substituted favour he would be nearer the mark. I do not doubt the Judge, but I do not think that he can perform his duty with satisfaction to all parties during the presence of any exhibitor.—A LOVER OF FAIR PLAY.

MANCHESTER POULTRY SHOW.

"I HAVE received a very good list of prizes to be given at Manchester, but there is one very great drawback, the Show is exactly at Christmas, and the fowls will have to be there during Christmas-day—a very objectionable arrangement, which, I should fancy, would deter many from sending

their poultry. I do not intend to do so unless it is altered, but it struck me when you noticed the prize list, which you generally do in THE JOURNAL OF HORTICULTURE, if you concurred with my opinion, you might make some remark upon the unsuitableness of the time. I should have thought the week after would have done as well, as there does not seem to be any great show advertised then. My apology for troubling you must be, that it seems a great pity for such a good Show, that the Committee have chosen such a time for holding it."

[We have not seen the Manchester prize list, but we publish the foregoing extract from a letter written to us by one of the most successful, and most extensive exhibitors, and add our opinion that any arrangement whereby poultry, and, consequently, their attendants are kept away from home at Christmas, is most objectionable. We hope that other exhibitors will coincide with our correspondent.—Eds. J. of H.]

CRYSTAL PALACE POULTRY SHOW.

OUR anticipations were fully realised, and amateurs supported this Exhibition in every way. We know not that we ever went to any show where all things were as comfortable as they were here. The two great elements of light and air abound, and with a double row of pens on each side, the whole space of the centre was open to spectators. In our opinion this is preferable wherever possible, to a row in the centre dividing the promenade, as it enables spectators to see the birds without effort or inconvenience, and also allows them the air they need. Experience is not thrown away on so good a general as Mr. Houghton, and accordingly rather than interfere with the *coup d'œil* of the whole, or the comfort of the visitors, he placed the Ducks out of doors, and he did wisely. Rouen Ducks, and still more Buenos Ayrean, require a strong light, and were never shown more favourably than last week at Sydenham. It was a clean and pleasant Show, and as our friend the Bloomer says in "Sponge's" celebrated tour, "May we have to record many such in our imperishable columns." The notice of the classes will, by their length, prevent any further remarks by way of introduction.

We must speak in terms of commendation of the *Spanish*, and here we shall have to notice that which will occur again—the success of a new name. Mr. Parsley was first-prize-taker in every class of *Spanish*. It need not be inferred from this fact that his victory was an easy one—he was well run up by the second and third prizetakers.

"They conquered all but Parsley;
Parsley, them."

It is unnecessary to say that *Dorkings* were strong. They live on the threshold of the Show. They may be at home at five in the morning, and judged in the Show before nine; add to it that those most acquainted with *Dorkings* in the *Dorking* country, have made this their show and tilting ground; yet, on this occasion they were beaten, and a gentleman from Berkshire beat one pen which took first prize. Good names followed. Capt. Hornby was second; Lady Holmesdale third; and Mrs. Fergusson Blair fourth. This says as much as a page of writing. The Rev. Mr. Hodson, Lady Legge, and Messrs. Priest and Wilcox showed excellent birds. Lady Holmesdale showed some beautiful Buff chickens, which deservedly took first prize. Many most excellent birds were disqualified by bad combs. There are curiosities in these things.

The combs of the White *Cochin* pullets were perfect throughout the class. Those of the *Grouse* were very good; those of the Buff very faulty. Mr. Stretch was second in *Grouse*; and Mr. Holmesdale showed beautiful White. beating Mr. ... class both prize-takers.

The *Brahma* class was very attractive. Mr. Barclay—who took first prize—was very hard on Mrs. Fergusson Blair. Mr. Priest's cocks were very good. We never recollect seeing better *Brahma* classes. The Black-breasted Red was the best among the

The *Piles* came next, the Brown Reds were not as good as we have seen them, and Duckwings do not show as well as chickens as they do as adults. The prize birds belonging to Messrs. Stubbs, Rev. G. S. Cruwys, and Mr. Matthew were perfect. Messrs. Wood, Pares, and Dawson also deserve especial mention, as do all the prizetakers in these classes. The *Single Cock* class brought the same names to the fore as the others—Messrs. Stubbs, Matthew, and Cock.

It is another of the curiosities of poultry and poultry-showing that the *Hamburgs* are never good alike. Sometimes the Golden, sometimes the Silver are the best. We had on this occasion a show of Silver-pencilled equal to the best days of the class; but the Golden, that have for some time been the perfection of pencilling, were many of them inclined to mossy plumage. Lady Holmesdale took two out of three prizes in Silvers, and is likely, we think, to repeat her victory. Mr. Robinson will also be hard to beat. The Golden-spangled were quite as good as the Silver-pencilled. They formed a truly remarkable class full of good birds, and the competition was a hard one. Messrs. Ellis and Brook may be proud of their birds. In the Silver-spangled, although they were not without merit as a class, yet there were important points that remained desiderata. The hackles of the hens were too light, and some of the cocks were almost white. Even Mr. Collinge's first-prize hen, which had many good points about it, was not free from these defects.

With the exception of the Golden, all the *Polands* are looking up. The Black and the Silver were perfect. In the former well-known names were obliged to be passed over, and in the latter Mr. Adkins showed matchless birds, easily taking both prizes. The *Single Cocks* also called forth the strongest commendations.

The *Malays* were not as numerous as usual. This should not be at the Crystal Palace. These birds are associated for many years with Wapping, Ratcliffe Highway, and the river's side, yet they only sent four pens. Mr. Sykes took both prizes.

We always think the Various class a sort of thermometer, giving the height or otherwise of the poultry pursuit. It may safely be said it is at blood heat, if varieties are to tell for anything—Black *Hamburgs*, La Flèche, Houdans, Crève Cœurs, Silkies, Chamois, *Polands*, Poule du Mans, Japanese, and many others. It is fair to notice the increase, numerically and in merit, of the Crève Cœurs and the Black *Hamburgs*.

The Golden and Silver Sebright *Bantams* were not so good as we have seen. Many of them had the *Cochin* fault of indifferent or faulty combs. The Whites were excellent, the Blacks good, the Game beautiful. Mr. Munn was very deservedly successful, being first and second with excellent birds; Mr. Crawford third. We here venture to repeat that which we wrote so recently: A Game Bantam should not droop its wing like a Sebright. There was a time when any Bantam that had the plumage of a Game fowl was a marvel, but that is no longer the case. When twenty good pens compete, Judges look for an approach to perfection. The Duckwings and varieties formed a very interesting class; seven pens figured deservedly in the prize list, Mr. Forrest's Duckwings and most excellent feather-legged Whites ones called for notice. But the most curious and, we must add, meritorious and attractive pen was one of Buff *Cochin* Bantams—Cochins in every respect but size. Mr. Harriek may be proud of his success. The cocks were also very good.

Mr. Fowler was first with Aylesbury Ducks, three birds weighing 22½ lbs. The second prize went to a new amateur, Sir St. George Gore, Bart., the weight 20½ lbs. The Rouen class was a perfect one, and here Sir St. G. Gore performed no mean exploit—he beat all competitors, even Mr. Fowler; his birds weighed 18½ lbs., half a pound more than Mr. Fowler's. The highly commended birds weighed nearly 17 lbs. per pen. A beautiful class of Buenos Ayrean brought honours to Mrs. Wolferstan and Mr. Ballance. It is impossible to imagine anything richer than the plumage of these prize birds. They were out of doors, and with the sun shining on them they were the perfection of the breed.

Mr. Fowler took both the prizes for White *Geese*, but they did not weigh so well as they have sometimes done, the heaviest pen 5½ lbs. The same may be said of the Grey, Mr. Daltry's prize pen was 5½ lbs. Mrs. Stammers' 5½ lbs.

Mr. Wright's *Turkeys* weighed 41½ lbs. Mr. Fellowes' 39½ lbs.

The *Ornamental Water Fowl* all belonged to Mr. Baker—Black Swans, Berwick Geese, and Bahama Teal.

There was the largest show we have yet had of Golden and Silver Pheasants. Mr. Yates and Master Welsh took the prizes. Among the Various Pheasants were Chinese, and some good Kaluges. It would be unfair not to notice, among the Extra Stock, some Jungle Fowls belonging to Mr. Baker, very beautiful and perfect birds.

All went off well, and we congratulate Mr. Houghton on his deserved success. Nothing can exceed his painstaking and his anxiety to do his duty strictly. The number of entries and the quality of the birds shown prove that amateurs appreciate the Exhibition, and have entire confidence in the management.

The following is the list of commendations:—

SPANISH CHICKENS (Cockerel and two Pullets).—Highly Commended, W. R. Ball, Newport Pagnel, Bucks; J. Clews, Walsall, Staffordshire.

SPANISH (Cockerel and one Pullet).—Commended, J. W. Smith, Oundle; J. Barry, Wandsworth Road.

SPANISH COCKS.—Highly Commended, R. Wright, Archway Road, Highgate.

DORKINGS (Coloured, Cockerel and two Pullets).—Highly Commended, C. H. Wakefield, Malvern Wells; J. Smith, Farham. Commended, A. Stanford, Eastons, Steyning, Sussex; Rev. M. Amphlett, Church Leuch Rectory, near Evesham; R. P. Rivett, Farham; Mrs. F. Blair, Balthayock, Inchmartine, Inchture, N.B.; J. Ashby, Capel, near Dorking.

DORKING (two Pullets).—Highly Commended, C. H. Wakefield; Right Hon. Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Commended, Right Hon. Viscountess Holmesdale; J. Ashby.

DORKING (White, Cockerel and two Pullets).—Highly Commended, H. Lingwood, Suffolk. Commended, Lady Mary Legge, Holmewood Lodge, Dorking; Mrs. Beardmore, Uplands, near Fareham, Hants.

DORKING COCKS (Coloured and White).—Highly Commended, Rev. J. G. A. Baker, Old Warden, near Biggleswade; Right Hon. Viscountess Holmesdale. Commended, Sir J. Paxton, M.P., Rockhill, Sydenham; C. Smith, Salisbury; Rev. J. G. A. Baker.

COCHIN-CHINA (Cinnamon and Buff, Cockerel and two Pullets).—Highly Commended, Rev. C. Spencer, College House, Attleborough, Norfolk; E. Musgrove, Ormskirk. Commended, J. W. Kelleway, Isle of Wight; S. Seatham, Forest Row, Sussex.

COCHIN-CHINA (Brown and Partridge).—Highly Commended, E. Tadmam, Whitechurch, Salop. Commended, C. H. Wakefield.

COCHIN-CHINA (White).—Highly Commended, F. W. Zurchorst, Dublin; Mrs. E. St. John, Oakley, Basingstoke. Commended, J. Biggar, Northampton; W. Dawson, Hopson, Miffield, Yorkshire.

BAHAMA POOTRA (Cockerel and two Pullets).—Highly Commended, J. K. Fowler, Prebendal Farm, Aylesbury; J. Pares, Chertsey; J. Wright, Woodbridge; C. Priest, Muntham Court, Worthing. **COCKS**.—Commended, Mrs. F. Blair; J. Clark, Chiswick Mall.

GAME (White and Pile).—Highly Commended, Rev. G. S. Cruwys, Tiverton, Devon.

GAME (Black-breasted Red).—Highly Commended, J. Stubbs, Stafford. Commended, Sir St. G. Gore, Bart., Derbyshire; J. Fletcher, Stoneclough, near Manchester; A. B. Dyas, Madeley, Shropshire.

GAME (Brown-breasted and other Reds, except Black-breasted).—Highly Commended, W. Pares, Oakbrook, near Derby; J. Wood, Haigh, near Wigan.

GAME (Duckwings and other Greys and Blues).—Highly Commended.—A. B. Dyas, Madeley, Shropshire.

GAME COCKS.—Commended, G. W. Ranwell, Portsea, Hampshire; J. Fletcher, Stoneclough, near Manchester.

HAMBURG (Silver-pencilled).—Highly Commended, J. Holland, Chestnut Walk, Worcester; C. Moore, Poulton-le-Fylde.

HAMBURG (Gold-spangled).—Highly Commended, Sir St. G. Gore, Bart.; H. E. Emberlin, Leicester; H. Carter, Holmfirth. Commended, T. May, Wolverhampton.

HAMBURG (Silver-spangled).—Highly Commended, Sir St. G. Gore, Bart. Commended, J. Leach, Newcastle, Staffordshire.

HAMBURG COCK (Gold or Silver-spangled).—Highly Commended, C. Priest, Muntham Court, Worthing.

POLANDS (Black with White Crests).—Commended, T. P. Edwards, Lyndhurst, Hants.

POLANDS (Silver).—Highly Commended, J. Wright, Woodbridge; Countess de Flahault, Tulliallan Castle, Kincardine-on-Forth.

POLAND COCKS.—Highly Commended, G. C. Adkins, Birmingham; H. Carter, Holmfirth.

MALAY.—Highly Commended, Master C. A. Ballance, Taunton.

ANY OTHER DISTINCT BREED.—Highly Commended, Mrs. D. Haig, Lichfield (Magpie Tariffans); W. Bowly, Cirencester, Gloucestershire (Sikkies or Japanese). Commended, C. Coles, Fareham (Andalusian).

BANTAMS (White, Clean Legs).—Commended, Sir St. G. Gore, Bart.; Rev. G. S. Cruwys.

BANTAMS (Black, Clean Legs).—Commended, Mrs. H. Freke, Highworth, Wilts; F. Pittis, jun., Newport, Isle of Wight; Rev. G. F. Hodson, North Petherton, near Bridgwater.

GAME BANTAMS (Black or Brown-breasted Reds).—Highly Commended, Sir St. G. Gore, Bart.; J. K. Fowler, Prebendal Farm, Aylesbury; T. H. D. Bayly, Biggleswade, Beds. Commended, E. Musgrove, West Tower, near Ormskirk.

BANTAMS (Duckwings, or any other variety of Bantams).—Highly Commended, T. Walton, Daventry; W. Lawrenson, Allestree, Derby; O. Nicholson; Rev. P. W. Story, Daventry.

BANTAM COCKS (Any variety).—Highly Commended, T. H. D. Bayly. Commended, J. W. Kelleway, Isle of Wight; M. Leno, jun., Dunstable, Beds.

DUCKS (Aylesbury).—Highly Commended, J. K. Fowler.

DUCKS (Rouen).—Highly Commended, W. H. Denison, Woburn, Beds; Mrs. F. Blair. Commended, W. J. Verner, Ryde, Isle of Wight; T. Shaw.

DUCKS (Black).—Highly Commended, Rev. P. W. Story; G. Botham, Slough; Mrs. Beardmore, Uplands, near Fareham, Hants.

DUCKS (Any other variety).—Commended, T. Walton, Daventry (Wild Ducks).

GESE (White).—Commended, A. S. Yates, Bishop's Sutton, Alresford, Hants (Chinese).

GESE (Grey and Mottled).—Commended, Mrs. F. Blair.

TURKEYS.—Highly Commended, Mrs. A. Guy, Grantham (Cambridgeshire); T. Hollis, Reading (Cambridgeshire). Commended, Right Hon. Lady Hawke, Womersley Park, Pontefract.

PHEASANTS (Gold and Silver).—Highly Commended, C. Baker, King's Road, Chelsea (Gold).

PHEASANTS (Any other variety).—Commended, C. Baker (Chinese Ring-neck).

PIGEONS.

POWTERS OR CROPPERS (Cocks, any colour).—Very Highly Commended, E. L. Coker. Highly Commended, R. Mackley. Commended, E. Bady, Portsmouth. *Hens*.—Very Highly Commended, R. Fulton, Deptford. Highly Commended, T. H. Evans, Lambeth Walk.

DRAGONS (Blue).—Highly Commended, J. Owens, Walworth Common. *Any other colour*.—Highly Commended, W. A. Boocbas, Stockwell.

ALMOND TUMBLERS.—Highly Commended, F. E. Elze, Westbourne Grove, Baywater.

SHORT-FACED BEARDS.—Commended, G. R. Ellenden, Greenwich; J. Owens; W. H. C. Oates, Newark, Notts.

JACOBS.—Commended, M. E. Jobling, Newcastle-on-Tyne;—*Equilant*, Oxford Street, London.

OWLS (Blue or Silver).—Highly Commended, Rev. G. F. Hodson; F. G. Stevens, Barnstable, Devon. Commended, C. Bulpin. *Yellow or any other colour*.—Highly Commended, H. Yardley, Birmingham; H. Morris, Forest Hill.

TURBITS.—Commended, H. Yardley; J. Percival, Rye Lane, Peckham.

FANTAILS (Black).—Highly Commended, F. E. Elze; J. Owens. Commended, R. F. Jarvis, Holmesdale, near Dartford, Kent; H. Yardley; H. Morris, jun.

BARBS (Yellow or any other colour).—Highly Commended, Mrs. Craigie Woodlands, Chigwell, Essex.

TRUMPETERS (Black Mottled).—Highly Commended, F. G. Stevens. *White or any other colour*.—Highly Commended, W. H. Denison; F. G. Stevens.

RUNTS (Spanish and Leghorn).—Commended, C. Baker, King's Road, Chelsea.

ANY NEW OR DESERVING VARIETY NOT BEFORE MENTIONED.—Commended, C. Baker, (Wonga-wonga, Bronzewing, and Californian Quail).

RABBITS.

BLACK AND WHITE.—Highly Commended, G. Booth, Nottingham (Buck). Commended, Miss Hawkey, Edgware Road, London (Buck); H. Hindes, Norwich (Buck and Doe).

YELLOW AND WHITE.—Highly Commended, H. Handford, Nottingham (Doe); H. A. Silvester, Springhead, Gravesend (Buck); Messrs. Hall and Co., Plumstead, Kent (Buck). Commended, H. A. Silvester (Doe); J. Hinks, jun. (Buck and Doe); G. Jones, Birmingham (Buck); W. C. Boorer, Woolwich, Kent (Doe).

TORTOISESHELL.—Highly Commended, W. C. Boorer (Buck). Commended, G. F. Greenall, Birmingham (Buck); C. Sallen (Doe); H. Hindes, jun. (Buck and Doe).

BLUE AND WHITE.—Highly Commended, J. Morris, jun. (Buck).

GREY AND WHITE.—Highly Commended, J. Harris, Brighton (Buck). Commended, A. Stedman, Oxted, Surrey (Buck).

SELF COLOUR.—Highly Commended, Messrs. Hall & Co. (Buck). Commended, C. F. Pentecost, Kensington, London (Buck); C. Sallen (Doe).

FOR WEIGHT.—Highly Commended, G. Briddon, Chesterfield (Doe). Commended, J. Harris, Brighton (Doe).

FOREIGN.—Highly Commended, Master J. de la S. Simmonds Chilcomb Rectory, Winchester (Buff Silver Grey Doe). Commended, G. Buchanan, Port Vale, Hartford (Angora Buck); Master G. de la Simmonds (Silver Grey or Chinchilla Buck); Master J. Archer, St. Ives, Huntingdonshire (Silver Grey Buck); C. Young, Gipsy Hill; J. Baily, jun., Mount Street, Grosvenor Square, London (Belgian Doe).

MONMOUTH FARMERS' CLUB POULTRY SHOW.

This was held on the 14th inst. The following is the list of awards:—

GESE.—First, Mrs. A. Jones, Priory Farm. Second, Miss Price, Trewan. *Geolings*.—Prize, Miss Price, Whitfield.

DUCKS.—First, Mrs. Elliott, Tretire. Second, J. Pearce, Wyesham. *Ducklings*.—Prize, R. H. Nicholas, Malpas.

SPANISH.—Prize, J. Heckley, Wyesham. *Chickens*.—Prize, J. Pearce, Wyesham.

DORKINGS.—First, Mrs. A. Jones, Priory. Second, R. H. Nicholas, Malpas. *Chickens*.—Prize, W. Hall, Rockfield.

COCHIN-CHINA.—First and Second, R. H. Nicholas, Malpas. *Chickens*.—Prize, R. H. Nicholas.

HAMBURGERS (Gold or Silver-pencilled).—First, Hon. J. F. C. Butler, Llantillo. Second, R. H. Nicholas, Malpas. *Chickens*.—Prize, Hon. J. F. C. Butler.

POLANDS (Gold or Silver-pencilled).—First, R. H. Nicholas, Malpas. Second, I. Theyer, Walford Court.

GAME.—Prize, G. Pritchard, Llanvihangel. *Chickens*.—Prize, J. Jones, Llwynygar.

BANTAMS.—First, G. Aldridge, Monmouth. Second, J. Jones, Redstreak. *Chickens*.—Prize, W. Hall, Rockfield.

ANY OTHER VARIETY.—First and Second, R. H. Nicholas, Malpas (Silver-spangled Hamburgs, Chinese Silkies).

GUINEA FOWLS.—Prize, Mrs. A. Jones, Priory Farm. *Young birds*.—Prize, Mrs. A. Jones.

PIGEONS.—*Carriers*.—Prize, R. H. Nicholas. *Tumblers*.—Prize, R. H. Nicholas. *Fantails*.—Prize, R. H. Nicholas.

RABBIT.—*Himalayan or Brimble*.—Commended, G. E. Bond, St. Weonards.

TWO QUEENS AT LIBERTY IN THE SAME HIVE—LOSS OF THE QUEEN.

MR. WOODBURY has mentioned the death of the young queen which he discovered at liberty in a stock possessing a fertile queen. A few words on the history of the affair may not be unacceptable to apiarians.

Mr. Woodbury having kindly presented this young queen to me, she was added to an artificial swarm on the 20th of August.

September 7th.—A considerable quantity of brood on one comb.

Sept. 16th.—Ditto on three combs. Queen is of a beautiful colour.

Sept. 18th.—Drove the bees of one of my stocks, killed the queen, and united the bees to the artificial stock. With the exception of securing the Ligurian queen, every care was taken. No fighting whatever took place the first day, but on the following one there was considerable, and the queen was destroyed.

Sept. 21st.—Royal cells making. The young Ligurians out in large numbers, proving of first-rate colour.

Sept. 23rd.—Royal cells sealed. Added a common queen, but the bees destroyed her directly.

As it is so late in the season the young Ligurian queen is probably by this time at liberty, but cannot be of any service, and as I do not want to have any except drone-breeding queens, she must be destroyed, and the bees united to an adjoining hive.

This disaster is the more vexing, as I have been in the habit of uniting bees with impunity, having never before experienced such a catastrophe as the loss of the reigning queen, where the precaution was taken of removing the stranger. Probably there is an antipathy between the two varieties, which makes the operation more dangerous. The swarm was populous enough to go through the winter, and I ought to have been satisfied in leaving well alone. It will be a lesson to me never to risk such an operation where a valuable queen's life must be placed in jeopardy.—S. BEVAN FOX, *Exeter*.

FOUL BROOD—AN EXPERIMENTAL APIARY.

I REALLY must unite with "B. & W.," the Hon. and Rev. W. C. Ellis, and many others who have protested against the tone and style of Mr. Lowe's recent communications.

It may, as he says, amuse old-fashioned as well as modern apiarians to peruse his account of what we may of course imagine to be his own doings, in the character of "the Enigmatical and the Experimentalist," and it may certainly throw some light on the nature of the so-called experiments—save the mark!—which have misled him in the matter of foul brood.

Although I have never done so, I will not deny that it may be possible by means of mismanagement, so to paralyse a colony of bees by an overwhelming quantity of chilled brood, as to simulate some of the evils and not a little of the appearance of actual foul brood. And this is what Mr. Lowe has evidently done. He first crushes the energies of his unfortunate bees by an overpowering mass of chilled brood, and when they sink despairingly under the incubus, he declares authoritatively that "decayed and abortive brood in all stages are not removed by the bees, and consequently must remain a permanent evil in whichever hive they are unfortunately found." Having arrived at this satisfactory conclusion, our experimentalist proceeds to relieve his miserable bees from the intolerable evil he has himself inflicted on them; and when with the indomitable spirit of their race they set to work to repair the ravages he has made, and possibly even ultimately prosper in spite of his ill-treatment, he triumphantly declares that the evil "is an evil with which I have found that I have not been able to deal."

That he is mistaken in his general indisposition of bees to remove decayed and abortive brood I shall presently have occasion to mention, especially in connection with the foul brood being the result of such half-measures as he describes here. The standard word is, "all else"

in due time find this out for himself, whenever it may be his misfortune to meet with the true disease in his apiary.

On the 19th of August, I perused Mr. Lowe's reprobation of my proceedings in allowing brood to remain a dozen hours in a warm kitchen, coupled with the assertion that under such circumstances foul and abortive brood would follow as a necessary consequence. There is something almost provokingly absurd in gravely experimenting for the purpose of establishing a fact already so well known, and one which in a few months' time the merest tyro in apiarian matters may verify for himself by a cursory examination of the ground in front of a good stock after a sharp spring frost; but it so happened that I had by me a large piece of comb crammed with brood in all stages (principally sealed), which I had cut out of a hive in the North of Devon, four days previously, and which I had brought home and left uncared-for in a fireless apartment. Here, then, was an opportunity for an experiment—not certainly in Mr. Lowe's slashing style, but quite sufficient for the purpose—and I accordingly placed this comb—this mass of chilled and abortive brood in all stages—in one of my colonies which had only recently been cured of foul brood by the means described by me in pages 97 and 98, and sneered at accordingly by Mr. Lowe. What was the consequence? The re-appearance of foul brood? No. Was the comb suffered to hang a putrefying and corrupt body in the midst of an inert and despairing population? Not a bit of it. The bees at once set to work and dragged out every defunct embryo; a few of the younger ones were, I believe, even hatched after all this neglect. The queen deposited an egg in every cell as soon as it was emptied, and all hatched out in due course; and the comb now worthily maintains its place as part and parcel of the furniture of a thoroughly healthy stock. So much for Mr. Lowe's dictum so authoritatively laid down.

Having, therefore, refuted Mr. Lowe's singularly erroneous assertions, the question of *cui bono?* must necessarily arise; and I would ask him in all seriousness, whether he believes such proceedings as he has portrayed are likely to advance the cause of apiarian science? I care not whether it be, as I have shown good reason for believing, a more or less accurate description of his own manoeuvres, or whether he intended it as a caricature of what he imagines to be the proceedings of others; but I would ask if such an epistle as his last is at all likely to aid in developing the true principles of apiculture?

It is also to be regretted that Mr. Lowe has not responded to his own appeal and been "candid for once." In page 304, I took leave to correct one of his misstatements of my words and meaning. These are again so numerous in his last article, that it would be tedious to particularise them. I will, therefore, merely notice a couple of specimens. First, then, I stated in page 97, that "Dzierzon declares that every hive that has contained a foul-breeding colony should be exposed to the sun and air for two years before being restocked." This period Mr. Lowe has enlarged to "four years," apparently for no other purpose than that of enabling him to ask ironically "Would not three years and a half do?" A few lines further on, he quotes, or rather misquotes a sentence in inverted commas. Need I say that a great part of that sentence was never written by me, and, that as misquoted, it distorts and exaggerates my meaning?

I have, I believe, conducted my share in this discussion with fairness and moderation, and if Mr. Lowe will follow my example, I shall be at all times ready and willing to exchange with him, in the pages of THE JOURNAL OF HORTICULTURE, the results of our mutual observations and experience. If on the other hand he prefers endeavouring either to snatch a questionable advantage, or to conceal a defeat by resorting to misrepresentation and sarcasm, he will neither be imitated nor again replied to by—A DEVONSHIRE BEE-KEEPER.

ACCLIMATISATION OF HONEY BEES.—Dr. A. Gertsäcker, in concluding a very extensive memoir on the distribution of the honey bee, observes that the most valuable form for Europe would be the Egyptian, partly on account of their beauty and partly because of their unwillingness to use hair-tips. This appears to be common to all African bees

and is also one of the recommendations of the Italian bee. The Syrian bee agrees so closely with the Egyptian that it may prove equally valuable; and next to these in value are the bees of the coasts of Asia Minor.—(*Annals of Natural History*.)

LIGHT-COLOURED POLLEN.

My bees, like Mr. E. Fairbrother's, are busy collecting large quantities of light-coloured pollen, no part of which can possibly be drawn from fuchsias, as these are now totally bereft of leaves as well as flowers, having, along with the dahlias, been cut down by the sharp frost of the 5th inst.

Being curious to ascertain from whence the bees obtained the supply, I traced them to the yellow weeds called "Skillochs" (specimen herewith), by the country people in this quarter, and blooming abundantly at this season on some soils, and very possibly the yellow flowers to which your correspondent refers.—A RENFREWSHIRE BEE-KEEPER.

[The "Skillochs" sent by our correspondent is the charlock, *Sinapis arvensis*.—Eds. J. of H.]

BEEES IN FRAME-HIVES.

We are obliged to the writer of "Apiarian Notes." Will he kindly say if his bees attach his frames to the sides of the boxes, and what he considers the best distance between a frame and the box—top, bottom, and sides, so that they may not be joined together by the bees? Mine have done better this summer, I only lost my stock in the way referred to in my former communication. I do not think this was from foul brood; nevertheless, I have always found some few decayed and stinking larvae, but I can hardly yet believe this was the cause of their leaving their hive. I have always been of opinion that the bees leaving was the cause of the foul brood. The subject deserves very close attention, and I for one am deeply interested in the lively manner in which it has been discussed, and the gentlemen engaged in it deserve our best thanks.

I have taken great pains this summer to weigh one stock and its swarms day after day when practicable, but I fear it would not be found of sufficient interest to your readers.—EDWARD FAIRBROTHER.

[1st. I have never found my bees attach their combs to the back and front of the boxes in a line with the frames, and in only a very few instances have they united the outer combs to the sides of the boxes. Where this has been done it has almost invariably occurred to frames of comb too wide for the space in which I have inserted them. In shifting frames from one hive to another, the combs will often come in contact with each other and the sides of the box. All that is requisite is, within a day or two to remove each frame and pare away the parts of the combs which have been united by the bees. This plan is constantly followed by those apiarians who desire, for scientific and practical purposes, to have complete control over the frames throughout their apiaries. Without this facility frame-hives possess little if any advantages over ordinary boxes; but with it the pleasure and interest in the observation and management of bees are incalculably increased. It may appear strange that the bees do not bring the combs outside the ends of the frames so as to attach them to the box, and at first I supposed that they would frequently do so, but the bee-master prescribes the form and shape of the comb he wishes them to construct; and I have found that, like some human individuals, they are content, to use a well-known phrase, "to accept the situation."

2nd. The distance I allow between the frames and the box in every part, top, bottom, and sides, is exactly three-eighths of an inch. This will be found near enough to prevent elongation of the ends of the combs, and distant enough to allow of easy removal of the frames without crushing bees between them and the box. The only place where bees will construct their combs outside the frames is on the top, and here they are rather fond, in a good honey season, of filling up the space between the cover, or adapter, and the tops of the frames. When the cover, or adapter, is thus fastened down, a little force in a twisting direction is necessary. The

broken comb attached to the cover must be always scraped away. My first frames were not sunk in separate notches, but rested on a rabbit three-quarters of an inch in depth, which extended the whole length of the back and front. Although this plan possesses some advantages in the removal of full frames, yet I found the force occasionally necessary to remove the top would shift the frames from their places, and have, therefore, latterly adopted the plan of sunk notches below a three-eighth-inch rabbit. The dimensions I have adopted for my boxes are larger than those recommended by my friend Mr. Woodbury, but I consider his hive to be of the size likely to be most generally useful. The Woodbury-hive, as sold by Messrs. Neighbour, of 149, Regent Street, is a first-rate article, and is made either of straw or wood. The excellence of the work in the square straw hives must be seen to be appreciated.

3rd. I will not now enlarge upon the subject of "foul brood," as I hope before long to fulfil my intention of making this the theme of a separate paper.

4th. I should be very glad if Mr. Fairbrother would favour us with the table of the daily weights registered by his hive and its swarms, giving the hours of the day or night when the observations were taken. Having had a suspended hive in operation during several months of this summer, I should like to compare the results in the two localities.—S. BEVAN FOX.]

FERTILE WORKERS.

HAVING brought our bees home from the heather on the 26th of September, I looked at the hive whose bees were laying drone eggs, which I noticed in a communication appearing in your Number of Oct. 6, and found eggs just laid, and certainly no queen. There were only 220 bees altogether, as we counted them; so that there is not the least doubt whatever that bees with no apparent difference to the eye are still capable of laying drone eggs. I introduced a queen to the bees, thinking they might fight when the rival egg-layer came in; but instead of this they would have taken the queen to reign over them. If it would be of any use I would very gladly send the bees to Mr. Woodbury that he might make a microscopic investigation of them, and find out the bee or bees which were laying.—ALEX. SHEARER.

[I am much obliged by Mr. Shearer's kind offer, but the detection of the actual egg-layers is far beyond my skill as a microscopist. Although I have had several such cases (two during the present year), I never could succeed in distinguishing fertile from ordinary workers. In reply to a private inquiry I may add that I esteem breeding an advantage at any season whether late or early.—A DEVONSHIRE BEE-KEEPER.]

FOUL BROOD.

IN answer to Mr. Woodbury's remarks in No. 133, Oct. 13, I have to state that the isolated sentence he quotes should have been given in *extenso*, in its entirety, and considered in connection with the context. The language I did use was this:—"If it is to be termed a disease at all, let it be described, as Mr. Taylor described it in last Number, an entirely 'artificial one.'" The words, "an entirely artificial one," are Mr. Taylor's, and all those in italics Mr. Woodbury has thought proper to leave out. The sentence is put hypothetically, "if it is to be termed a disease," if writers persist in calling it so, if they will have it so, if, because the evil is produced frequently, and principally, by ill-timed and wrong-directed artificial processes, then "let it be described as Mr. Taylor described it, &c." But to show what my own views really were, and that I did not choose so to designate it, I immediately added "abortive brood, however, can never be classed under the category of bee maladies." I illustrated my views. The embryo chick in the chilled egg dies, but in common parlance we do not say of disease; and so of a great number of accidental and other kindred deaths among the old and young of all creatures, we do not designate these as produced by disease, properly so called, and so, also, of foul or abortive brood.

In other parts of the same article I say, "If foul brood be a disease, I should like to know by what it is caused?"

Again, "I know of no writer who has, in my estimation, satisfactorily accounted for the presence of foul brood in a hive on the supposition of its being a disease." And, again, "I am not disposed, therefore, to view the presence of foul brood in a hive as a disease, properly so called, at all." And, lastly, to prevent any misconception of my views, I said, "Let me here anticipate any objections which may be urged to the evils in question being produced only artificially," and went on to show that foul brood may be frequently produced "from purely natural causes," and without any interference or meddling whatever.

These quotations will show that I repudiated the doctrine of foul brood being considered as a disease at all. Indeed, I was scrupulously careful not to designate it as such in any of my papers, and, consequently, I must repeat that I did not treat the subject on those principles.

I can assure Mr. Woodbury that I have no intention of "withdrawing from the discussion."—J. LOWE.

BEE-KEEPING IN STAFFORDSHIRE.

I RECEIVED the following letter some time ago from a gentleman in Staffordshire, to whom I am personally an entire stranger, and upon my acceptance of his extremely liberal offer, it was followed by a truly magnificent stock of bees. I, of course, lost no time in returning my warmest thanks; and as my esteemed correspondent is pleased to express himself indebted to me for information on bee management, I solicited and obtained permission to publish his letter, which shows that although he has adopted my hives and experimental system, he has entirely escaped the evils which have been so erroneously described as the natural consequence of the experiments of—A DEVONSHIRE BEE-KEEPER.

"DEAR SIR,—If a stock from a prosperous apiary is likely to assist in stemming the downward torrent, I shall have great pleasure in presenting you with one of my swarms containing a young queen which has proved herself very prolific.

"My own bees have done wonders, as the following statement will show:—

"May 9.—I made my first swarm. In ten-frame hive nadired and bell-glass.

"May 20.—Ditto second. In nadired ten-frame straw Woodbury-hive.

"May 23.—Third swarm came off naturally. (This I will send you.) Is nadired in thirteen-inch bar-hive.

"May 26.—Fourth swarm came off naturally (my best queen). Nadired and bell-glass in Bevan-box, eight bars.

"These are all from one hive, but the first swarm was peopled by placing it on the stand of another hive.

"June 24.—Swarm of May 9th, sent out a strong swarm, although it had been transposed on the 16th with swarm No. 2, in large straw hive.

"July 3.—No. 1, of May 9th, sent out a large second swarm. This I returned but had to nadir their hive to prevent clustering, although they were in a ten-frame hive and surmounted with a large bell-glass.

"July 10.—Maiden swarm of June 24th, sent off a good swarm which was unfortunately lost, having taken refuge in a church roof three-quarters of a mile off. I had transposed on or about the 7th this swarm with one from a storified-hive of June 23rd, which began to cluster outside, and this made them swarm. By this transposal the two swarms changed their working population almost entirely, as they were hived within a day of each other, and brood had matured in both hives. Notwithstanding this misfortune both these hives are very populous, and I have had to nadir the swarm of June 23rd containing the population of the maiden swarm to prevent hanging-out. The other hive, the maiden swarm, is well filled with bees, and has had no further trouble.

"I have no more to write at present, but I am sure that the above will be of interest to you. I am, Sir, very respectfully,
Yours truly,
J. WOODBURY.

which they had constructed after an occupancy of only three days, so as to fall on a shallow paper tray, drew them forth in hopes of obtaining the queen, but she and the bulk of the bees crawled higher up under the roof and baffled my attempts. I have made several unions this year in the method recommended in THE JOURNAL OF HORTICULTURE with the most perfect success and without the least fighting. The smell of the peppermint effectually prevents the bees from recognising each other, or discriminating between friend and foe.—J. E. B."

AGE OF QUEENS.

I AM afraid that "A DEVONSHIRE BEE-KEEPER" has been rather too precipitate when he says that the one case decides the question as to the age of queens.

For example, a number of years ago, while examining my hives in autumn to ascertain their state for stocks, my attention was particularly drawn to two of them from the immense quantity of brood they possessed, and which was apparently in good condition and promising well for a future year, and, as a matter of course, carefully covered up for the winter. Having passed inspection I looked no more after them till spring, when I noticed a dwindling-away. My suspicion was at once aroused that there was something wrong. An examination of No. 1 took place, and thinking there was no queen from the fact of there being no brood in the hive, I turned out the bees to satisfy myself; and to my astonishment I found the very same queen that had already proved herself so prolific the autumn before, actually producing no eggs whatever though scarcely two years old, and the worker bees paid no attention to her any more than if she were an ordinary worker bee. No. 2 had also ceased to produce bees. The only things in the shape of brood or young in this hive were one drone and one working bee, and thinking there was some chance of their doing well, I allowed them to remain; but ere many days they left the hive, leaving nothing but the queen bee and drone in the hive. This queen was three years old. Although this appears to corroborate "A HAMPSHIRE BEE-KEEPER'S" opinion, I am sure it is only an exception.—A LANARKSHIRE BEE-KEEPER.

[This is almost the only case in which I cannot support my opinions by my own experience. It does appear to me, however, that Mr. Lowe's evidence, as well as that of "A LANARKSHIRE BEE-KEEPER" himself, to say nothing of all other authorities on the subject, prove most conclusively that seven years is a very exceptional age for a queen bee to attain—so exceptional indeed, that I am still inclined to fancy it, in the language of our police courts, "a remarkable case of mistaken identity."—A DEVONSHIRE BEE-KEEPER.]

OUR LETTER BOX.

SPANISH COCKEREL MOULTING (*Subscriber*).—The cause of the appearance you name is a little weakness at the time of moulting. The cure is patience. If you remove the false quill, or case, that covers any of the feathers, you will find it perfectly formed within.

ACCELERATING MOULTING (*Nesciens*).—Let the bird roost and be housed as usual. Feed him well, but not on stimulating food. Let him have ground oats mixed with milk. If he has no grass run give him lettuce. Avoid meat and hempseed.

DORKINGS FOR BIRMINGHAM SHOW (*G. P.*).—Let your Dorkings run about. Feed them well on soft food, bread sopped in milk, oatmeal, or, failing that, barley meal mixed with milk. Be sure they are fed at day-break. If they have far to travel give them some bread and ale before they go. Wash their legs and feet before they go, and let them have some clean straw at the bottom of their basket.

ROUPEY TURKEYS (*M. R. D.*).—The disease your Turkeys are suffering from is roup, and the remedy you have adopted is for gapes. Give the patients bread and ale freely. Let their faces be washed with vinegar and cold water, and let them be kept in a dry place. Change their ground if you can, and separate the unsound from the sound. Use Baily's pills.

SPANISH COCK'S COMB DROOPING (*R. A. G.*).—If the cock's comb was quite erect before moulting, you may fairly hope it will be so again. We cannot say as much for the chickens. It is useless ever to keep a Spanish cockerel with a falling comb. He is useless for exhibition, and worthless for sale. Falling combs have been remedied by being tied in an erect position with silver wire, but few birds are worth the trouble and expense, as no one would breed from such.

SILKWORM'S EGGS (*S. L. L.*).—You can purchase them in Covent Garden Market. They only require to be put into a box strong enough to avoid being crushed during the journey.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	NOVEMBER 3--9, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
3	Tu	Lilac leafless.	55.2	36.3	44.8	15	58 af 6	29 af 4	16 11	55 0		16 18	307
4	W	Laburnum leafless.	51.3	36.6	44.0	19	vii.	27 4	morn.	21 1		16 18	308
5	Th	Gunpowder Plot, 1605.	53.1	38.4	45.7	17	2 7	25 4	20 0	41 1		16 16	309
6	F	Camerarius born, 1554. Bot.	55.1	39.4	46.8	18	4 7	24 4	26 0	1 2		16 14	310
7	S	Cherry leafless.	52.6	37.5	45.0	17	6 7	22 4	22 2	22 2		16 11	311
8	S	23 SUNDAY AFTER TRINITY.	51.1	34.8	43.0	16	7 7	20 4	41 3	44 2		16 7	312
9	M	PRINCE OF WALES BORN, 1841.	50.6	34.7	42.7	14	9 7	19 4	53 4	9 3		16 2	313

From observations taken near London during the last thirty-six years, the average day temperature of the week is 52.1°, and its night temperature 36.7°. The greatest heat was 63°, on the 5th and 6th, 1834; and the lowest cold, 18°, on the 9th, 1848. The greatest fall of rain was 1.02 inch.

GARDENERS' BENEFIT SOCIETY.



ALLOW me to thank the Editors for the interest taken, and the labour bestowed, in perfecting some part of the scheme which I so sanguinely propounded in the spring of the year. Permit me also to congratulate my brother gardeners on the fact, that the Editors were placed in a position to announce "that steps were taken to form the Society." I would also thank those that have already given their support to the measure, more especially Mr. F. Chitty, for it was he only that had any critical remarks to offer upon it. Whilst doing so I cannot forbear noticing the reserve with which the members of the profession have treated the question, nor can I help expressing my astonishment at the little interest we gardeners take in all measures proposed or established to further our advancement. We seem as if we had no Saxon blood within us, nor any of that brotherly sentiment which strives to mitigate those infirmities and calamities that befall humanity in one shape or other. Other members of special occupations have had their unions, and other working men (I would like gardeners to feel that they are dependant on their own endeavours), have been banded together as one man to mitigate and relieve each other's infirmities, and to bear each other's burdens. This is, indeed, charity, a brotherly feeling, and something more. They have periodical meetings, when all meet together, congratulating each other on their general well-being, or sympathising with their sick brethren, to whom they administer relief according to their regulations. What a gap is there between us and them! We have long had a society for our disabled men and disconsolate widows, but what support have we given it? Some have given a mite; others, and by far the greater number, could not spare a yearly contribution of £1 to provide against those infirmities that disable them or their brethren. They would do nothing to benefit others, nor have anything in store for themselves against the day when it is needed, nor feel the pleasure of giving others what they are blessed in not needing.

The greatest drawback, however, to gardeners subscribing to the Gardeners' Benevolent Society, is the circumstance of non-subscribers being placed on the pension list in preference to the subscribers to its funds. That this admirable institution has done much good must be patent to all, and that it is worthy of every gardener's support few will deny; but that it contains anything in the way of gardeners supporting their own sick, or even the majority of the "worn-out," is not presumed: therefore, the Society newly proposed is not framed out of antagonism to it, but to supply a want it does not deal with. I think it prudent to state this, for after the new Society was proposed, it was said in my hearing, that the

No. 126.—VOL. V., NEW SERIES.

new one was got up in opposition to the "Gardeners' Royal Benevolent Society." Since that the scheme I proposed has been framed on, what I may term, an amended and more popular basis. Instead of being an improvement, annuity, and benefit society, it is to be a benefit or friendly society only; and as in matters of this kind when a bill is brought in by a private member, and the government offer a counter proposition, or take the question into their hands, the member gives up all care of it. So with the question now before us. When the Editors took the matter in hand, I fell into my private position. I was glad to do this, for it must be evident to all that the matter could not have fallen into better hands.

Although thankful for the small slice of the reform, they (the Editors) think we are at present entitled to, I am not the less convinced that the whole scheme as propounded by me will ultimately be carried out, nor the less certain that what I then said will hereafter be said with the unanimous voice of the gardening community. Men have been more sanguine than I am over many greater things, and I could name in proof at least a thousand.

It would appear pretty certain, from what I learn, that we are to have a Friendly Society: therefore, the following information relating to such societies may not be uninteresting to the general reader, whilst acting as a sort of preliminary to the discussion of the proposed Society.

Daniel Defoe, author of "Robinson Crusoe," in his "Book of Projects," published in 1696, was the first to propound the scheme which has resulted in the formation of friendly societies. Some writers, however, were of the opinion that the ancient guilds of our Saxon and Norman ancestors were identical with our friendly societies. This, nevertheless, could not be the case, for it was only after the extinction of serfdom that workingmen became dependant upon their own efforts. There certainly was no such society in Defoe's time, for in his "Book of Projects; or things desirable to be done," was a scheme for the formation of societies, the contributions from the members of which would provide for relief in sickness and old age, and not only for the members but their widows and orphans. He stated that "if such societies were formed, it would do away with pauperism, shut up poor-houses, and close the jails."

Nine years after, or in 1705, the first society was formed. Two years prior to this, or in 1703, the first bill was introduced into the House of Commons. It passed the Commons, but was thrown out in the House of Lords. Another bill was introduced afterwards; and the renowned Mr. Pitt, with his customary forethought, could so far see the benefits likely to accrue to the country by the formation of friendly societies, that he gave his support to a bill brought in by Mr. George Rose. The bill passed both Houses of Parliament, and became law in 1793.

After the passing of the bill, friendly societies became general; but owing to the careless manner in which the early societies were conducted, and there being no sound data to found them upon, some of them collapsed at the

No. 788.—VOL. XXX., OLD SERIES.

very time when the benefits promised were required. Declaration upon declaration has been poured forth against working men on the score of ignorance and imprudence in this respect. Their failures were more due to the want of sufficient experience on which to found such societies. Most of the greatest blunders were made by the actuaries, who were really incapable of framing tables for the safe guidance of these societies; but after long experience sufficient data have now been obtained, showing the exact basis on which such Societies should be founded. The data furnished by long experience seem to point to four laws, which it would appear ought to be borne in mind and acted upon, if the Society formed be expected to meet all demands upon it, and remain prosperous:—

1st. The rate of contribution should be graduated according to age. The young, because less liable to sickness and death, should pay smaller contributions, as they are likely to contribute much longer than the old. Others, because more liable to sickness and death, therefore not likely to contribute so long, must pay larger contributions.

2nd. The contributions should be such as to leave an annual surplus, which, being invested on good security, would act as a guarantee fund in times when disease and death are unusually prevalent.

3rd. Such societies ought not to consist of few members in a lodge, for the expense connected with a small lodge would be equal to that where the lodge was four times its numbers. The strictest economy ought to be rigidly enforced in regard to the management of these societies.

4th. The invested capital should be laid out at a reasonable rate of interest, for when the rate of interest is high we may be sure the security is bad. High rates of interest on questionable security (of which they are indicative), are to be avoided.

When societies are framed on the conditions named, with an efficient staff of members as officers, wholly or mostly unpaid, a suitable meeting place, and the whole governed by rules made or confirmed by the whole of the members at a general meeting, there is no fear of the society not working satisfactorily.

Friendly societies, to take a retrospective view, have greatly assisted in raising the social and moral condition of working men. Since their formation the working classes have made great progress in the arts and sciences. They have also promoted habits of sobriety and industry, and better than all, frugality, and been a direct means of diminishing the poor rates. Mr. Tidd Pratt, I think, calculated that no less a sum than £2,000,000 sterling is annually saved to ratepayers by the formation of friendly societies. This sum is, no doubt, somewhat in excess of the real amount saved; but when we consider that three millions of working men belong to these societies, that their contributions amount to £5,000,000 sterling annually, and that they have invested capital to the extent of £11,000,000, we cannot but be pretty well sure that a very large sum is annually saved to ratepayers, for many families that are now relieved by friendly societies would otherwise be obliged to claim parish relief when the head of the family was prostrated by sickness.

Lord Brougham has calculated that working men have in these societies a reserved capital of not far from £20,000,000 sterling, and in the saving's-bank £40,000,000, or between £50,000,000 and £60,000,000 in all, which is demonstrative of the saving habits and self-reliance of British workmen. The men who contribute to these societies are just the men that seek to render poor rates unnecessary. They strive to keep away from the last refuge of the prodigal and unproviding. But all these benefits are nothing when compared with the moral influence exerted on society by these saving habits, which not only benefit the members individually, but the community generally, by teaching the young self-reliance or dependence upon their own endeavours, all being taught the value of law and order. They also fit men for more important positions in society, and further man's moral and intellectual advancement.

Such good they do, but they might do much more. They ought to make a special provision for the widow and the fatherless children of a deceased member, not so much to render permanent assistance, but temporary relief in special cases. I allude to those members out of their early manhood, leaving behind them a widow and children, who are unprotected

for. It is very productive of misery when it occurs, and the removal of a widow with half a dozen helpless children to the workhouse is a sight that has few equals in amount of sorrow.

Now, supposing a fund raised by entrance fees and private donations were specially set apart for this purpose, would not the interest resulting therefrom afford relief to these especial cases, and the capital itself form a guarantee fund in addition? I think it would, and I should like to see a fund, in connection with the Gardeners' Benefit Society, specially set apart for the relief, temporary or otherwise, of fatherless children and distressed widows of deceased members. If members under twenty gave 10s., above that but under thirty years of age £1, and so on, with the donations likely to flow into the exchequer from the many amateur lovers of gardening, I am persuaded that we could raise a fund that would do even more towards the object in view than the most sanguine amongst us could credit. I do not see the propriety of adding invested capital to invested. I had rather see the interest devoted to a good purpose, than derive any pleasure from the thought "we are becoming rich." What is the use of money hoarded up to meet the wants of the next generation! Secure your solvency by a guarantee fund at the commencement, and nothing short of the grossest and most wanton negligence in the administration of affairs can affect your solvency thereafter.

Allow me now to go into committee on the Gardeners' Benefit Society, it being my object to sift it, and to debate the whole question as if I were able to attend the preliminary meetings of the Society.

I think the rate of contribution is too high for the benefits promised. The Foresters, Odd Fellows, &c., give the same pay in times of sickness as the Society proposed for the same contribution; and also £10 at the death of a member, and £5 at the death of a member's wife, and yet these Societies have an invested capital to the extent of several thousands sterling each; the Foresters being the richest, and the Odd Fellows the strongest numerically of all societies of the kind in this country.

The examination-board, I think, is objectionable. Being connected with gardening gives men no claim to act as examiners unless otherwise fitted for the office; and if they are to be gardeners, I would just as soon stand before a Chinese interpreter and be examined in that peculiar language. Examiners should have certificates of a high order themselves, or I certainly could not expect anything like justice to be done.

On Rule 3 I beg to propose that "Benefit members shall be those who contribute for themselves," omitting the words, "or others." Sir John —, or her Ladyship, might contribute for her gardener; he might leave, another come, and they both be ill during the time they lived under Sir John, and derive in that way more benefit from the Society than those members who were not so niggardly as to let their masters do what they ought to do with pride themselves. Employers' contributions ought to be given for the general benefit of the Society.

On Rule 18 I move to insert after the words, "Any person wishing to become a benefit member of the Society, shall satisfy the Directors as to his character," these words, "Give proof of his having been a gardener for the last seven years, if above twenty-five years of age, &c."

A conservative or protective scheme this! Decidedly. We want something to distinguish who are and who are not gardeners. We must draw a line somewhere. If all men that work in gardens are gardeners, we must be strong numerically, and ought to have had at least 10,000 names by this time.

On Rule 19, I should like to see a clause inserted for gardeners when out of employment, relieving them from contributing at such times, providing always that their non-employment is not caused by carelessness, idleness, or culpable negligence. I have known many gardeners out of employment for two years, twelve months, and between that and six months very commonly, through no fault of their own—I have myself been unemployed for nearly six months. This, when a man has a family, and the low wages we receive when in employment, prevent our laying by much against rainy days; and such small savings will hardly enable a man to keep his family from starving much longer than

bute to a benefit society, when out of employment. A member thus exempted from payment when unemployed would have his contribution carried to his account, which he would be required to pay—i.e., the arrears as well as his regular contribution—on his obtaining full employment. It would be highly mortifying to members to be discarded the Society because misfortune hindered their being able to meet the contribution required by the Society. The Odd Fellows are acting upon this principle during the prevalence of the cotton famine, and are now relying on the accumulated funds of the Society.

I have only to add that I am one of those most likely to derive great benefit from the establishment of such a Society. There are some that have no apparent necessity to join societies of this kind; but I would ask such, Are you prepared to avow that you are not inclined to strive to alleviate the suffering of your fellow men? We rely on your aid, your counsel, and good wishes for the furtherance of the general well-being of the infant Society, not only on account of the great benefits to be derived from it by our unfortunate and afflicted brethren, but to uphold the character of the craft, and to bring out the philanthropic qualities which other men abound in, and for which we have been too long undistinguished. Also, remember, we want those most unlikely to need relief to become benefit members; but at the same time honorary members will give such donations and subscriptions as will place us on a sure foundation, and be the means of our occupying the position we ought long ago to have held. It cannot be expected that the Society to be established will suit all; but whatever it be, so long as it is the decision of the majority, I pledge myself to act and abide by that decision.—G. ABBEY.

WINTERING GERANIUMS IN A SPARE ROOM.

THE successful wintering of Geraniums in a sitting-room depends so much on the previous treatment to which they have been subjected in propagating and managing them up to the time that inclement weather renders it necessary to house them, that we think it necessary, in answer to "AN OLD SUBSCRIBER," to enter somewhat into details on these points, as well as on the treatment most likely to insure success after they are placed in the room for the winter.

It is taken for granted that the "Pelargoniums," from the number of young plants which "AN OLD SUBSCRIBER" is anxious to preserve, are not what are commonly called Pelargoniums, but the varieties of Geraniums now so much used for planting-out in summer; but should we be mistaken in this matter, the treatment that is best for the one section is very applicable to the other, as far as their successful preservation in winter is concerned.

Keeping in view the object in which our correspondent is more immediately interested—namely, success in keeping her plants robust and healthy through the winter, we will first speak of the propagation of the plants, and in doing so we would point out several errors into which amateurs of limited experience very generally fall. In the first place, the operation of propagating is delayed till much too late in the season, and then the cuttings selected are far too small; the tips of the shoots, about 3 or 4 inches long, being chosen. Now the successful wintering depends to a very great extent both on the size of the cuttings and on the time they are put in. Under all circumstances, and more particularly when they have to be wintered in spare rooms or any similar place, the cuttings should be put in before the middle of August; and instead of taking the mere soft sappy points of the shoots for cuttings, these should be taken sufficiently large from the plants to have that portion of them, at least, which is to be inserted in the soil of well-consolidated wood, and altogether they should be from 6 to 9 inches in length, according to the size of the respective sorts, instead of three and four-inch cuttings, as commonly used. These strong well-organised cuttings root more speedily and with scarcely any failures, they give far less trouble in winter, and in spring make finer plants. So much for the nature of the cuttings and the time of putting them in.

To preserve them, after they are struck, with the greatest possible success we recommend pots instead of wooden boxes. Although we have wintered hundreds of thousands of cut-

tings in boxes with great success, yet it has always been most evident that those in pots were always in the best condition in spring; and for convenience in wintering them in sitting-rooms pots are most desirable, and those known as 24's or eight-inch pots are the most serviceable. But in whatever vessels they are propagated these should be well drained to begin with, and then filled up with a compost consisting of equal proportions of loam, leaf mould, and sand, and when these three constituents cannot be conveniently had, as not unfrequently happens, the next best to use are equal proportions of common light garden soil and road drift, two elements which are easily obtained by most people who attempt gardening. The cuttings should not be inserted thicker together than at the rate of twenty to the square foot, and strong-growing sorts not so thickly. There is nothing gained by the crowding system, especially in the case of such as our correspondent, who wishes to winter her plants successfully in a spare room, and who has no glass house in which to push on in spring plants that have been injured by being crowded in winter. After the cuttings are all in, the best place to set them to root in is the hottest possible spot out-doors—that is, where they can get most sunshine, and be freely exposed to air. We never find Geraniums struck under glass or anywhere else thrive so well as those rooted out of doors—they are so hardy and stubby when housed as compared to those struck under glass or in room-windows. When the cuttings are made, all the big leaves should be removed except a few at the top of the cutting, and ever afterwards they should not be allowed to become crowded with superabundant foliage. The air should play freely through them, so that the young plants may become solidified and hardy. They should be left out-doors till danger from frost or the heavy rains of autumn render it necessary to protect them; and if this can be done in some temporary way, so as to shield them from both rain and frost, and at the same time expose them freely to all sunshine and dry weather till near the end of October, it will be preferable to putting them into a sitting-room, unless the trouble be taken to put them out-doors every fine day, which is better still if the labour would not be too much.

By carrying out the treatment indicated by the foregoing directions the plants will be stiff rustling "stuff" that will be much more proof against damping and mildew, the great enemies of soft, flabby, coddled cuttings that are put in late, and struck in some confined shaded position. After housing them for the winter, no more water should be given than is necessary to keep them from flagging, and that will be very little indeed. We often look with something akin to pity on Geraniums which are struck late, and placed in sitting-room windows with barely a root to them, to be gorged with too much water—treatment which ends in a large per-centage of death and a miserable remnant of wretched-looking plants. On the shelves of our vineries we winter thousands of Geraniums, and from the beginning of November till February we seldom give them a single drop of water, and if this is considered good treatment on the shelf of a dry vinery fully exposed to all the sun and light that such a position can afford, it will readily be inferred that we recommend them to be kept very dry at the root, more particularly when they are to be wintered in a sitting-room, always a dark place as compared with the shelf of a vinery. It is much preferable to allow them to flag a little than to aim at making them grow in such a position; and by being kept dry at the root they multiply their feeders and acquire an amount of irritability which insures rapid progress when repotted in spring. We, therefore, recommend "AN OLD SUBSCRIBER" to give just water enough to prevent much flagging, and that will be very little indeed.

They should be looked over frequently, and all decaying leaves removed, and when the weather is mild and not foggy air should be admitted to the room. Unless they become very dusty it will be best not to moisten the foliage at all, as moisture is just one of the evils to be contended against. The best way of cleaning the leaves is to take a moderately moist sponge and wipe them with it. Geraniums in this hardy and dry condition will stand 2° or 3° of frost without injury, but it is not advisable to subject them to a lower temperature than 32°. At the same time they will be all the better in spring if never warmer than 40°

through the winter. As all cannot be set close to the window, the best way is to keep those which show the palest hue next the glass, or treat all alike in this point, letting them have time about in the best position.

With regard to the use of guano, in the case of Geraniums in a sitting-room there is no necessity for any artificial application of the sort. The power of plants to decompose ammonia depends on the amount of light to which they are exposed; and to apply any such stimulant to plants resting, as your Geraniums ought to be for the next three months, would be akin to the feasting of an individual, whose liver was clogged up and congested, with roast beef and brown stout. If you keep your young Geraniums cool, dry, and exposed to as much light as possible, these are the matters on which their hue and health depend.

All the fire that should be applied is just enough to prevent the temperature from falling below the freezing-point; and instead of vessels of water to keep the air moist, it should be kept as dry as possible, and when any of the leaves show signs of damp a fire might be kindled occasionally during damp weather.—D. THOMSON.

HARDY FERNS.

As certain diseases become epidemic, and many persons who had not hitherto suspected that they were in any way predisposed to them find out that such is the case, and oftentimes to their great trouble and danger; so in horticultural matters, diseases become epidemic there. Horticultural constitutions, which seemed at one time impervious to anything of this kind, are suddenly attacked. The eruption assumes a most violent form. The patient becomes restless, dissatisfied, evinces strong acquisitive tendencies, and is altogether a somewhat troublesome neighbour. His friends are sure to think him "daft." He talks either bad Latin, or declares his acquaintance with the highest aristocracy in the land—yea, even with royalty itself, and talks about the "Prince of Wales" and the "Princess" as if he were their confidential friend; indeed he, somewhat rude and personal in his remarks, has no hesitation in saying that the Prince is goggle-eyed or that the Princess "is weedy." I never believed, for instance, that I had the least tendency to Filicomania. I had out many a peg, for layering Carnations, from Ferns, had waded through them in earlier days, when shooting had more charms for me than floriculture, but never, beyond admiring their feathery looks, gave them more than a passing glance; but when I had seen them petted and admired I felt that there was, there must have been, some predisposition in me towards them. The disease was increased by the kindness of some friends who gave me some to grow; and was materially aggravated by my friend Mr. Ivery, of Dorking, consigning to my care and protection some of the British varieties: and now with his and Mr. Sim's catalogue lying before me, I wish to say a few words to encourage the growth of our native species and varieties, of which we may say the name is now "Legion." Mr. Sim's catalogue comprising 315 species and varieties; Mr. Ivery's being more select, but still containing a goodly number. As to the mania itself, I think that it is uncommonly sensible, mainly because the charm of Ferns arises from form entirely independent of gaudy colouring. So much do I think of this, that few in my opinion can really study (I don't mean botanically), their varied and beautiful forms without having their taste improved, for correct taste has its foundation far more in the form than in colour. It is not the colouring of the old Etruscan vases or the Pompeian lamps that makes them so invaluable, but their correct and beautiful shapes; and when masses of colours, distinguishable at a great distance from their brilliancy, have become so much in vogue, I think it is well that colour should beamed down now and then by resting amidst the beautiful forms and lovely verdancy of the fernery.

And now a word or two as to the fernery itself. I am not speaking of Fern-houses but of the hardy fernery. Of the two requisites for a perfect one I am, alas! unable to command one—viz., freedom from wind. Shade I can command to a certain extent, but the wind baffles me. It whisks me my narrow garden, twists the fronds all about, scorching the leaves and making the fernery look like a charred

sideable extent; so my best varieties must be grown in pots kept in a pit during winter, and under the friendly shade, not of a "wide-spreading Beech," but of a tiffany house; but still, withal, I try to keep up the semblance of a hardy fernery. This structure must be a matter of taste; and there is one rule that I think is worth while remembering—viz., Avoid everything that partakes of what is commonly called "cockneyism"—all shells, whitewashed flints, and such like abominations. Use good honest stones, or, what I think as suitable as anything, "burrs" from a brick-kiln. I suppose that all do not think so; for a good old friend and neighbour of mine, seeing my fernery in process of formation, asked "What I was doing with all that brick rubbish? Was I going to make a drain?" These materials should be piled up according to taste, making them have as ruinous an appearance as possible, and exposing the rough portions of the bricks to the outside, while convenient spaces should be left for the introduction of the Ferns. Some persons use roots of trees; but they breed such a quantity of fungi that they are, I think, very objectionable, though their appearance is very much in their favour. Any one who has seen the positions in which Ferns most delight to luxuriate will at once see that a light sandy soil is the most natural one for growing them in, and this must be compassed if possible in the fernery. I have tested the cocoa-nut refuse, and find it answer admirably. Mixed with an equal portion of peat and some silver sand, it forms to my mind the very best material for them. Where peat cannot be readily obtained leaf mould mixed with it would be an excellent substitute. The refuse retains a considerable amount of moisture without soddening, and the roots of the Ferns positively luxuriate in it. It is equally useful in the pot-culture of Ferns.

Some excellent remarks are made by Mr. Sim in his preface relating to the planting of the Ferns in the fernery, and I cannot do better than quote his own words:—"In arranging the plants generally, the evergreen and deciduous kinds should be so planted that when the foliage of the latter dies off for the winter, there may still be abundant objects of interest throughout the whole. To this end, pre-eminently valuable is the winter verdure of *Scolopendrium vulgare*, *Blechnum spicant*, *Polystichum aculeatum* and *P. angulare*, *Polypodium vulgare*, *Lastrea semula* and *L. dilatata*, *Lastrea Filix-mas*, and the very numerous, beautiful, and distinct varieties of most of these species."

And now what kinds would be most suitable for the purpose? Of this part I can only speak from my own limited experience; but having grown some of the species and varieties through Mr. Ivery's kindness, I will mention what seem to me most desirable; and, first, I would say, give place to royalty, and plant *Osmunda regalis* in a suitable and commanding position. In my own little spot I have a pipe which is supplied with water from the waterworks, and to this a fine rose, so that I can, whenever I like, have a miniature fountain at work. Close to this I have placed the *Osmunda*, which delights in a moist soil, and by slightly turning the tap there is, whenever the water is on, a continuous moisture, so that I hope my plant of it will flourish well if the cruel winds allow it to do so. Then we must have the Lady Fern (*Athyrium Filix-femina*), and some of its many beautiful varieties. Let me name a few out of the fifty-seven, which Mr. Sim places in his list.

apusforme, a curious and small-growing variety.

corymbiferum, handsome largish variety, with fronds from 1½ to 2 feet.

depauperatum, curious and distinct.

Fieldia, a very remarkable and beautiful variety.

Frizellia, a very elegant and curious sport.

laciniatum, remarkable lance-shaped fronds. A very pretty variety.

multifidum, the fronds are curiously and beautifully tasselled.

plumosum, a very graceful and beautiful Fern.

thyssanotum, very neat and pretty.

Of the Male Fern (*Lastrea Filix-mas*), itself very beautiful, there ought to be added the following:—

Bollardii, a distinct and beautiful sort.

cristatum, one of the very noblest and best of our British Ferns. It makes the head and might to be in every collection.

Of the common Polypody (*Polypodium vulgare*), there are also many varieties. Of these select *cambricum*, the Welsh Polypody. *crenatum*, a fine and stately variety. *marginatum*, a curious and not by any means common Fern. Of *Polystichum angulare* there are also a large number of varieties—upwards of forty—and of these some must be had. *cristatum*, a beautiful crested variety. *depauperatum*, very small and curious. *proliferum* *Woolastonii*, a most beautiful, slenderly-cut, and distinct Fern.

Others may be selected; and it must be borne in mind that the evergreen character of this Fern makes it a most desirable addition to the hardy fernery, and when used with the varieties of *Scolopendrium* it will impart a fresh appearance to it even during the depth of winter.

The *Blechnum spicant*, or common Hard Fern, is also indispensable. Of the numerous varieties of it perhaps the most desirable are

imbricatum, a strikingly handsome and distinct variety. *ramosum*, somewhat crested, and very beautiful.

Scolopendrium vulgare is another evergreen species, of which there are no less than seventy varieties, and of these several might be selected.

crispum, edged like a frill.

digitatum, a very beautiful crested variety.

marginatum, curious and handsome variety.

ramosum, exceedingly handsome.

Then there are other Ferns which may be added, such as *Woodsia ilvensis* and *Cystopteris fragilis*; nor would I be without the *Pteris aquilina*, the common Brake, from whence I have flushed in former days many a partridge, for its fine noble habit well entitles it to a place amongst its congeners; and others might be added as the fancy or pocket of the cultivator may suggest. I have not recommended rare species, or varieties merely curious in a botanical point of view, but such as I think would make a good beginning for a hardy fernery. I would, however, repeat what I have formerly said, that from what I know of our principal Fern-growers, any one may safely put himself into the hands of such men as Mr. Ivory and Mr. Sim, and if well inoculated I have no doubt that the virus will be sufficiently strong to spread, so that he will, by-and-by, be looking to add to his present small collection; or it may set him off at once upon the pursuit; and I am quite sure that the ladies of the family, if not altogether wedded to "King Croquet," will rejoice in the cool and fresh-looking appearance of the hardy fernery.—D., *Deal*.

P.S.—May I here correct an absurd sentence in my paper of last week on new Roses, arising from my wretched habit of fast writing? After enumerating the Tea Roses, I am made to say these all "succeed" well; it should have been "sound" well. There are other trifling little inaccuracies of grammar, to which not I but my bad writing must plead guilty. The note, too, on *Rose Reine de la Pape* ought to have been as a note to the paper, and not have been separated to another part of the Journal.

DEATH OF MR. DONALD BEATON.

IT is very painful to us having to announce the death of Mr. DONALD BEATON, which took place at his residence at Surbiton, Kingston-on-Thames, at seven o'clock on the evening of Saturday last, at the age of 62.

For a considerable time past, since his last illness, Mr. Beaton had been in an unusually good state of health, and had become as active and vivacious as ever he was in his best days. He was constantly engaged in attending to his plants and in reading up the latest horticultural information; but on Thursday evening last he was suddenly seized with an attack of paralysis, which entirely deprived him of the use of his left side, and from six o'clock on the morning of Friday till the time of his death he was perfectly insensible.

There are none who knew Mr. Beaton personally, and few who knew him only by his writings, who will not regret to hear of this event. For upwards of thirty years he was in the van of English horticulture, and for many years the leader of that branch of it which more immediately

concerns the flower garden. To Mr. Beaton we are mainly indebted for the direction that has been given to the modern style of English flower gardening, saving that part of it which is distinguished as "the polychrome style," and it is generally allowed that through his articles, as published periodically in the pages of this Journal, his fine taste and skill in the harmonising of colours have exercised an influence which has operated in all the best garden establishments in the country.

It was not in the practice of gardening alone that Mr. Beaton excelled. Although he has not taken a position among botanists, he was no mean proficient in that science, and there is, perhaps, not another example on record in the history of our British gardening of one who applied that science more skilfully and beneficially to the practice of horticulture. His knowledge of botany was not of that common order which consists in running over the names of plants; but whether on questions affecting the alliances, the structure, or the physiology of plants, he was equally acquainted with them all, and he possessed an originality of thought, a keen perception, and a strength of intellect that enabled him to step aside from many of the received opinions, and to promulgate views which some of the most eminent physiologists of the day were not slow to accept. Even as a botanist, however, his name will always be on record, the late Hon. and Rev. Dean Herbert, himself an accomplished botanist and one who could well appreciate the talents and worth of such a man as Mr. Beaton, having founded the genus *Beatonia* in honour of him.

As a friend Mr. Beaton was sincere, cordial, and constant; as a neighbour, generous, benevolent, and kind; and as a man, he exemplified, in all his relations in life, the strictest integrity, a scrupulous sense of honour, a forgiving disposition, and a charitable feeling to all with whom he was brought in contact. His playful humour, with which all our readers are so familiar, was perhaps the most prominent feature of his character, because it was that which he had the most frequent opportunity of exercising; but no other of the characteristics we have mentioned were less developed, although there were not the same opportunities for exhibiting them.

The Editors of this Journal feel acutely the final loss of their esteemed friend and fellow labourer. Fourteen years of daily intercourse knitted them and him closely together, and enabled them thoroughly to appreciate his sterling worth and to know full well the benefits they derived from his aid. In him they had an able coadjutor. And what though at times he was hasty in his assertions?—he was always hearty; if he chafed occasionally at opposition, in good time he made amends by proofs of his correctness or acknowledgment of his error; and he never depreciated the merits or undervalued the attainments of those who were students or labourers with him in the same field.

To the last he devoted himself to his favourite pursuits; he literally died in the midst of them, for it was when in the act of providing protection for his favourite flowers for the winter that he was seized by the disease which so soon proved fatal.

As soon as intelligence of Mr. Beaton's attack reached us, Dr. Hogg, whom he has left as his executor, and to whom he had previously entrusted the entire management of all his affairs, hastened to his house, but too late to receive from him a word of parting. The fatal symptoms had already set in; and, after two days of much apparent suffering and entire unconsciousness, our lamented friend breathed his last.

Mr. Beaton was a native of Urray in Ross-shire, where he was born on the 8th of March, 1802. For his portrait and a more detailed account of his career we must refer our readers to our Vol. 13, page 153.

GROUND VINERIES.

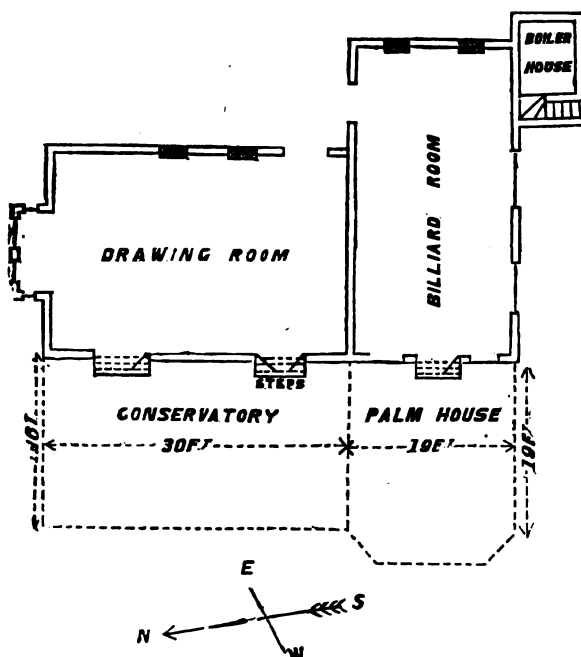
No more successful or interesting mode of growing Grapes in small gardens was ever invented than this. Black Hamburgh Grapes have ripened well in them as far north as Manchester; and Trarham Black and Black Hamburgh at Sawbridgeworth in Mr. Rivers's ground vineries.

It is a most remarkable fact that Vines trained on slates

under glass ridges, to which the above name is now applied, although never syringed or watered, never have red spider or oidium. For their immunity from the former the constant radiation of moisture from their "mother earth" sufficiently accounts; but why oidium does not visit them I cannot quite make out. These most simple of all vineries are now very common in the south of England, more particularly in Berkshire. A clergyman stated to me last season the almost-incredible fact that he had sold Grapes from his ground vineries to the amount of £20, which he had devoted to charitable purposes.—VITIS.

CONSERVATORY AND PALM-HOUSE CONNECTED WITH THE RESIDENCE.

I ENCLOSE a sketch of a conservatory and Palm-house I propose erecting, attached to a house I am now building. The drawing-room will open into the conservatory, 30 feet by 19, and 18 feet high, by two French windows, and the billiard-room into the Palm-house, 19 feet in the square. I have arranged the boiler-house so that the pipes pass under the billiard-room floor, so as to prevent injury to the table in cold weather. I wish to ask your opinion on the plan, and should be further obliged by your advice how to arrange the interior for the best. Also, what plants you would recommend, more especially for the Palm-house, which can, if necessary, have a height of from 30 to 35 feet.—PERSEVERE.



[1. We believe that any of the builders who advertise in our columns would give you rough plans and specifications, and it is always best to have a clear understanding on these matters before commencing operations.

2. We see nothing objectionable in the position of the contemplated houses. We presume they will be span-roofed, or ridge-and-furrow-roofed, which will divide the rays of light more equally, as the main front of the houses will be to the west.

3. The position of the boiler is all right enough, provided you go deep enough down with it. The idea of taking the pipes beneath the billiard-room floor is good, but we notice that from the steps from the billiard-room into the proposed Palm-house, and the steps from the drawing-room into the conservatory, the floor of these places respectively will be from 18 to 24 inches below the level of the billiard-room floor, and, therefore, if the heating-pipes are merely to be on the surface of these houses, the flow and return must be at all that depth, and the floor of the billiard-room.

The similar heating arrangement would be to

take a flow and return pipe right beneath the billiard-room floor on to near the west end of the Palm-house, and along to the north end of the conservatory, joining the flow and return there. If the pipes should be sunk enough below the billiard-room floor—say $3\frac{1}{2}$ to 4 feet, then these main flow and returns could also be sunk beneath a path, out of sight, only by this arrangement there would always be a little heat in the conservatory when heat was not wanted in the Palm-house, and this with plenty of air would never do any harm. If deemed advisable, however, to keep all artificial heat from thence except when wanted, the pipes may go on as proposed, but a connecting bend should join the flow and return at the division between the houses, and a valve shut in the conservatory part would prevent the flow in that part when not needed. Keep in mind that this main flow-pipe should never fall from the time it leaves the boiler until it takes the bend to return thither. If that pipe at the north end of the conservatory is 3 inches higher than where it started from the boiler, it will be better than if on a dead level; and at that highest point a small gas-pipe should be left open to prevent air accumulating, the open end of that pipe standing higher by a couple of feet than any other pipe in the house. From these two pipes other pipes can be taken to heat the houses, the one in the conservatory to be shut or opened with a valve.

5. The position of the pipes would much depend on the plan of arrangement. Such houses could not be kept at their best without other preparatory houses. Suppose, for instance, in the case of the conservatory, that you have some 18 or 24 inches next the drawing-room for steps, and then 3 feet of walk; the same in front of fruit-wall, some 18 inches in height, and a three-feet walk there, and two walks across opposite the two French windows; you would have a bed in the middle, and a bed at each end, and a bed or border in front and back. The common plan would be to take the pipes on the sides and ends, place a stage over them, a stage also in the middle, and supply with plants in pots in the usual manner. Now, if we wanted to make that conservatory an elegant affair, we would not have a pot seen, nor yet a pipe either. We would take two four-inch pipes right round the house (or three in front and north end, and two at back and south end would be better), and we would place them in a shallow trench beneath the pathway—the sides of pathway of stone, the centre over the pipes of iron grating to walk on. We would fix on as many places as we wanted for creepers—say, two at the back of the house, and six in front, preparing brick pits well drained for them, about 2 feet square, and as much in depth. We would have no stages at all, but would surround all the beds with kerbs of stone or slate 6 inches deep, and instead of planting-out the plants in the beds, we would plunge the pots in fine sandy soil, and cover with moss. All the inconsistency of glowing red pots and ill-assorted stages so near a drawing-room would thus be avoided, and the majority of the plants in the beds might be so managed as never to be much above the eye, but rather below it, whilst flaunting creepers and suspended baskets would amply fill up what space could be spared above head, so as to let plenty of light come in. What could be more beautiful in winter than a bed of Camellias fronted with Daphnes of kinds, and these with edgings of Hyacinths, Narcissus, Tulips, &c., and yet not a pot of them all seen to disfigure the chaste effect, with Acacias, and Habrothamnus, Passifloras, &c., depending from the roof? These creepers with a little rich mulching or manure-watering would grow strong enough, and the contracting of the roots in the small brick pit will cause them to bloom more freely than when the creepers are planted out in the house.

6. The same principle will apply to the Palm-house. A walk may go all round, and the pipes may here also be beneath the pathway; but if the same nicety need not be observed, the principal pipes might go under a wide shelf on the south side and west front. These shelves could then be supplied with stove flowering plants in pots, whilst the centre bed might be partly planted out, if such a plan were deemed advisable. If much were to be done in that way, as the bed in the centre would be about 10 feet square, it would much assist such plants as *Musa Cavendishii*, and others, if there were three four-inch pipes beneath the bed in which they were to grow. The Palm-house would be grown satisfactorily

in such a house. Four pipes connected with the flow would be needed for top heat round the south and west ends, and one or two as returns, and joining the main return, could go round the division between the houses.

To make the most as to appearance, the beds should be arranged as in the conservatory, a pipe taken round beneath the warm borders, three beneath the central bed, and the plants planted-out, or seeming to be so from plunging the pots. That such attention to elegance is not often met with is just a reason why a man of taste should set the example. Then, likewise, the pipes for direct top heat would go beneath the pathway. One advantage this mode would have is, that no shelves or stages would be wanted. As in the conservatory, basket Orchids, trailing stove plants, and the climbers, would do all the work above head. Who will break in on the dismal monotony of shelves, and all the rest of it?—R. F.]

VINES IN POTS.

A FRIEND sent me packed three well-ripened Black Hamburgh Vines, seemingly only a year or two old (judging from the size of the wood), but as I have not much room, I would prefer them in pots. A line from you will meet my difficulties, which are—1st, Size of pot they will fruit in; 2nd, Soil; 3rd, When to prune.—A. G. J.

[If our correspondent had informed us whether he has received the Vines in the pots in which they have been grown and established themselves, or whether they are Vines that have been planted-out in a border for a time and then lifted, we would have had no difficulty in giving directions which would have met his case precisely. But as the Vines may have been received in either of the two conditions named, it will, therefore, be necessary to give directions bearing on both cases, in order that what shall be said in answer to the first question will meet the case. It would save a deal of perplexity and waste of words, if in such special cases more minute and explicit information were given as to the state of various plants and fruits about which information is required.

1st. If the Vines are in the pots in which they have been grown, it will not be necessary to repot them into pots of larger size, if those they are in are not less than 16's, or 10-inch pots. In the size named they will ripen a heavy crop of fruit, all other things being equal, with proper attention to watering and feeding with manure water. Presuming that they are now in pots not larger than the size named, they should not be shifted into larger pots at all, unless the Vines are wanted to fruit for several years in pots. In that case it will best to shift them into pots a size or two larger. And were it not from the danger of breaking their tender shoots, we would not shift them till they had developed a good many leaves, and had begun to make fresh roots, which, unless plunged in an unnaturally and injuriously strong bottom heat, they never do till they have made considerable growth.

In the hands of a novice it will, therefore, be safer to shift them just as the buds are beginning to swell in spring. The pots should be well drained; the soil used should consist of three parts turfy loam, and one part well-rotted manure, with a sprinkling of bone dust. The balls should be moderately damp when shifted, and the fresh soil should be rammed firmly round the ball in potting. A 12-inch or 14-inch pot will keep a Vine 6 or 8 feet long in a fruiting state for a good many years with proper feeding and rich top-dressings.

2nd. If the Vines have been received without pots or ball, as is just possible, the size of pot must be regulated by the object in view. If it be intended to keep them in pots for years, and the Vines are strong and well rooted, then put them into 14-inch pots at once. Drain the pots well, and use the same soil as already named. Distribute the roots nicely among the soil, and pot firmly. In this case there must not be so sanguine a hope of a crop next summer, unless the Vines are thoroughly well ripened, and a little bottom heat can be supplied when they begin to move in the spring. But even in this case, and with the best management, lifted Vines are apt to do what gardeners call "run," or "wire"—i.e., they show fruit well enough at first, but when the

stored-up sap is exhausted the bunches run away into claspers instead of being developed into bloom.

They should be pruned immediately, and kept in the coolest part of your greenhouse for the next three months at least.

The want of room is that which appears to have led to the determination of keeping the Vines in pots. But we would suggest and recommend, if the position of the greenhouse will admit of it, to make a border and plant one or two of the Vines out. They can be pruned and trained to occupy any desired amount of room, and will give far less trouble, and be much more likely to give better fruit, and more of it, than in pots.—D. T.]

STYLES OF GARDENING.

It is but natural that opinions should vary on almost every subject, and it is well that it is so, since without difference of opinion there would be no controversy; and as it is by controversy that useful facts are often elicited, I see no reason to fear a provocation of it, if the question at issue is likely to be of interest to those engaged in gardening pursuits. We have been favoured occasionally with various opinions as to the comparative merits of the old and new style of gardening, as regards the planting of flower-borders; but mere opinions, unsupported by statistics, do very little towards settling the question either way. What we want is a few old hands to give their experience and their views in a plain practical manner, divested of anything like prejudice, or even sentiment; for it is unquestionable that there is a great deal of the latter quality exhibited in the lucubrations of those who pursue gardening merely as a source of gratification and pleasure. The only correct estimate, I should think, is arrived at by the thoroughly experienced and practised gardener, who has served his time from his youth upwards, passed through every grade of his profession, and performed his full share of hard work both of hand and head, so that when a piece of workmanship is set before him, he is able to weigh both cause and consequence, and give an opinion at once both correct and impartial. Whether he would say that the old style is better than the new, or the new better than the old, is doubtful; but most probably he would take into consideration the progress of the times, and assert that as nothing in nature or art is stationary, it is little to be regretted that the old style of gardening has followed the natural course of things in general, and has passed, or is passing away; and if the new style does not possess such varied or agreeable features, it would be better to modify the old style, and adapt it to the times in which we live, than to indulge in vain regrets that what has passed away apparently possessed greater charms than what we have opportunities of more closely inspecting.

Having from my earliest boyhood been familiar with some of the old-fashioned border plants, and learned very early to distinguish such ones as the Spiderwort, the Catchfly the Soapwort, the Speedwell, the Livelong, the Bee Larkspur, the Bachelor's Buttons, the Golden Rod, the Starwort, the pretty Sun Rose, the Snapdragon, the Willow Herb, and many similar plants with their true English names, it is but natural that I should preserve some little regard for them. Still, viewing them in their true light as subjects for border planting, it is impossible to be blind to the fact, that among all the old border plants there is not one that I could name that gives the brilliancy of colouring, combined with the dwarf, compact habit, and continuous blooming of the ordinary bedding Geranium—that it would be impossible to find among them plants to supersede the common bedding plants of the day, and obtain from them such brilliant masses of colouring for four or five months continuously.

It is all very well for your sentimentalist to dream of the old-fashioned mixed border, where he might cull his Daffodils in March, his Wallflowers and Cowslips in April and May, his Pinks in June, his Cloves in July, Phloxes in August, perennial Asters in September, and Chrysanthemums in October and November. Certainly there is variety, every object has its peculiar interest. Each month also brings its own peculiar flora, and this to some persons

possesses great attraction; but there is not, and cannot be, that striking display of beauty which the bedding-out system presents. In this latter system the effect is sudden; it breaks full on the eye from the first, but if well managed the eye does not weary, for every bed, or part of a bed, will bear a separate inspection. There is much more in it than the mere gratification of the organs of sight, for the taste of the designer in handling the materials, the quality of the workmanship, &c., may all be discussed, and form as much a subject for comment as a painting or a piece of sculpture.

Now one of the chief objections to the bedding-out system put forward by its opponents is the sense of dreariness that is produced at the close of the year, when the shortening days show their natural effects on the masses of plants, or when an autumn frost changes the whole scene in a single night and necessitates their hasty removal, suddenly converting what were rich beds of flowering plants into a barren waste. I, for one, do not agree that this natural process, which has many analogies, ought to produce any such feeling. No sense of dreariness is produced at the approach of night after enjoying the light of the sun during the allotted time. Neither do we dread the approach of the time of rest after a day of toil. Nor do I see why the falling of the leaf should be suggestive of melancholy thoughts. When the trees have been clothed with verdure their allotted time winter itself comes and changes the whole aspect of nature, and by the contrast we are enabled to see tenfold the beauties that the summer brings forth—not that the winter leaves the garden entirely devoid of attractions. If it has been laid out and furnished with a view to winter as well as summer decoration, the change of seasons merely produces a relief, and leaves no cause for depression.

If we cannot have the gay flower-beds in winter, what can be more really beautiful than the habit and style of growth of many of the Coniferous trees? A judicious planting of these alone will give an interest to any garden. Evergreens of any description will make a garden look lively during the winter—that is, when they are well arranged; and the arrangement is, perhaps, the main point, for this alone will make all the difference between a mere mass or collection of shrubs and a scene calculated to excite interest. Again: I consider that, supposing the flower-beds to form the principal feature of the garden, and that they are duly proportioned and neatly made either on grass or on gravel, if kept neat and tidy when otherwise bare, there is nothing about them suggestive of barrenness, for they must always be associated with their summer occupants. In fact, an old gardener once told me that it was his decided opinion that at no time of the year did the garden look so well as when put in order for the winter. With the edges trimmed, the beds and borders turned up, the grass and gravel in the best possible order, not even the gaieties of summer made it more attractive. Without going quite so far as that, we may satisfy our minds that each season brings its own peculiar aspects, none of which need be dreary or unattractive, unless we are determined that one or the other shall be so. In this case the fault does not rest with the garden or the season. Then, again, there are ways and means of clothing the flower-beds with verdure during the winter, and of having spring flowers on the same ground that we expect to have summer and autumn gaiety. The method I have myself adopted has been effectual in securing this object. The process, I believe, is well known among gardeners, and has been objected to on account of the extra time and labour required, and the fact of few being able to appropriate a piece of reserve ground sufficient for the purpose. But as regards the time and labour, these are much less than are required by the bedding plants themselves; and as to the reserve ground, no garden ought to be laid out without some provision of the kind. It is as necessary to the garden as the scullery is to the dwelling-house, and quite as useful in the small garden as the large one. Besides, I happen to think that in gardening, as in other things, for every effect there must be an adequate cause. I could have our flower-beds as attractive in winter and spring as in summer and autumn. The labour and necessary appurtenances must be proportionate. There is this much to be said, however, that plants used for winter and spring decoration must be hardy, consequently they do not arrive at the same stage of development as those used for summer decoration.

But to the method referred to. Some spring-flowering evergreen herbaceous plants—as the white and yellow Alyssum, Cheiranthus Marshalli, Evergreen Candytuft, and above all Primroses and Polyanthus—are divided or propagated in August. They establish themselves before winter, and would flower the following spring, but are prevented. They are planted in the reserve ground a foot apart each way; and having one clear season and plenty of room to grow, they make fine large tufts for planting in the following October or November, having been in nursery quarters about fifteen months. When the bedding plants come off, the ground is dug and manured, and these herbaceous plants put in. Being large a few make a good show, and they may be placed 2 feet apart, so that a few dozen plants will crop a large space. Gardeners who understand these matters will see that this is very different to putting in little plants that must be set 6 inches apart to produce any effect. Plants raised in this way will often flower all the winter and most abundantly, even closing together with the quantity of bloom in April and May; after which they may be taken up and kept for stock, the ground being again manured for the summer bedders. It will be necessary to have two stocks of these plants—one for the current year's planting, and one to follow in its place. Cheiranthus Marshalli and Candytuft should be struck from cuttings early in the summer, to be ready to plant out in August. The others may be divided at that time, and planted for good until fit for bedding-out. By this process, which I will not deny takes up much time, the flower-borders and beds may be kept gay winter and summer; and those who are in a position to try it, need no longer complain of the dreariness brought on by the loss of the summer flowers.—F. CHITTY.

REVIEW.

The Scarcity of Home-grown Fruits in Great Britain. By CHARLES ROACH SMITH, Hon. Mem. R.S.L., &c.

WE do not know whether this suggestive pamphlet has been published; but it was read before the Historic Society of Lancashire and Cheshire, and the author has obliged us with a copy.

There are no two truths more certain than that "Nature intended that fruit and vegetables should constitute the chief support of man," and that in the British Islands "There is a great scarcity of fruit, and consequently it is high-priced."

That man was intended to be chiefly a vegetarian is demonstrated not only by his physical construction, but by the results to him of long deprivation from vegetable food. Scurvy among long-voyaging sailors is well known to be only preventible by a liberal supply of vegetable substances, either fresh or preserved, and Mr. Smith thus records another evidence:—

"Some years since the boys in Christ's Hospital were so infected with cutaneous diseases that they were compelled to be sent home; and so general and bad was the malady that a medical inquiry was instituted. The evil was proved to have resulted from the want of fruit and vegetable diet. Now, if a school such as this, richly endowed and watched over, is liable to be infected with loathsome disease from the absence of natural food, can we be surprised that millions of our fellow creatures, steeped in poverty and ignorance, and of improvident habits, are the victims of a neglect or misunderstanding of one of Nature's primary laws?"

That fruit and vegetables are scarce in our islands needs no further proof than a visit to and noting of the prices in the markets of London and other large towns. But go to the pettiest huckster and purchase the commonest of garden produce, and you will have to pay 2d. per lb. for Apples, and 8d. per dozen for Cabbages. This is a price which places them among luxuries seldom to be indulged in by the labouring classes, and these high prices are maintained despite the very large importations from France, Spain, and elsewhere by increased steam navigation. It is difficult, now that fruit is imported free of duty, to ascertain the quantities brought from abroad; but we are quite sure that these quantities are unduly small since 1844.

yet from a return now before us we see that in that year duty was paid upon 182,590 bushels of Apples, 28,624 bushels of Chestnuts, 101,801 bushels of Nuts, 33,298 bushels of Walnuts, and on Grapes valued at £25,278.

That the deficiency and costliness of fruits and vegetables might be reduced admits of no doubt, and Mr. Smith thus points out some of the modes by which this most desirable result might be attained.

"If well-meaning noblemen and gentlemen, who take so much pains in constructing what are called 'model cottages' for labourers, would see that these labourers are industrious and provident, a well-stocked garden would be insisted on; but at present this grand accessory to the cottage, this vital source of half the year's subsistence, is left out of consideration, or it is made a matter of little consequence.

"There are enormous tracts of ground tenanted by thousands of persons less blessed than the class I have just alluded to, which, with just as much trouble as would be an amusement, might be cultivated, and would be cultivated if the masters of these men did their duty. The better-regulated French, even when encamped for a short time upon waste ground, will soon convert the waste into gardens, which occupy their leisure time, find them wholesome food, and keep them sober, cheerful, and contented. But in the districts of England to which I allude (take for example those of the brick-makers), squalor and wretchedness, drunkenness and high wages, go together. Neglected by their masters, who only look to the work to be done, their gardenless hovels are the picture of misery. Gaining wages enough to keep them with provident care through the winter, their only solace is the beer-shop; and for most of the winter months they subsist by begging or stealing, or live in the workhouse. I make no doubt that gardens would be books of instruction to them, and induce habits of foresight, industry, and sobriety, to which they are at present strangers.

"But how are we to provide Apples on an extensive scale to make them of general utility? Nothing is more easy. Be ever planting trees. I will give you a notion of what might have been done, and could yet be done, by the directors of our railways. Who will calculate the exact number of the thousands of miles of unoccupied land by the sides of our various lines? It is an easy task, and I here supply an estimate of what may be produced in a single mile. One mile would require about 250 trees, the cost of which, and the labour of planting, would be about £15. As good strong trees should be selected, in three years they would pay their expenses, and in a few years more we may calculate that out of the 250 about 200 would produce five bushels each, which, at 3s. per bushel would be £150; and, of course, if both sides of the mile of railway were planted the returns would be £300, and for one hundred miles we may calculate £30,000. But make yet a deduction for contingencies and the profit would be enormous. There is no reason, moreover, why our highways and byways should not be planted with fruit trees (especially the Apple), and also the vast tracts of land which surround hospitals, fortifications, and other public buildings.* One of the most absurd objections that has been opposed to my suggestion is that the fruit might be stolen. A highly intelligent friend of mine who keeps a large and respectable school, has, or had, a considerable space of unoccupied wall, the advantage of which for fruit trees I pointed out to him. He met my persuasion with the common objection—a fear of stealing. I observed, 'Your boys must eat something. Let them steal, or consider the fruit their own; and if you want any get up in the morning early and steal from them.' But where such large quantities of fruit as I contemplate would be grown, stealing to any extent need not be apprehended. How is it that in France we see the road-sides for miles lined with Apple trees? Is it that the French are more honest than we? If so, let us endeavour to rise to their standard of honesty."

Orcharding is now too much neglected, yet might most profitably be pursued, especially in the south of England

*Since writing the above I have had an opportunity of laying my views on this subject before the Chairman of the London, Chatham, and Dover Railway, and I have hopes that, in consequence, my suggestions will be, at least, partially adopted. If so, it is probable we may soon see the waste ground of our lines of railways yielding the shareholders a good profit from an unlooked-for source.

and Ireland; and we go further, now that glass and timber and other building materials are so cheap, for we know that they enable any one who will devote the money and time to the pursuit to grow the rarer fruits very profitably. We are acquainted with several persons who have erected very extensive orchard-houses, and sell the Black Hamburg Grapes from them very remuneratively. We would go even further, and observe that in hundreds—nay, in thousands of instances, similar extensive glass structures might be erected against parts of some of our manufactories and heated by their waste steam or waste hot water. Such structures by ripening still earlier the Grapes and other fruits grown within them, would be proportionately more highly remunerative.

DRESSING FRUIT TREES WITH GISHURST COMPOUND.

As the season approaches when gardeners begin to think of winter-dressing their fruit trees, and as Mr. Rivers and other authorities have recommended the use of Gishurst compound for this purpose, I now ask permission to give the result of some trials with Gishurst on my trees last winter and spring.

For several years past all the orchard-house trees when fully at rest—say in December, have been drenched with a solution of Gishurst, eight ounces (8) to the gallon of soft water, without any after-washing with water. This occasionally caused a few buds from weakly trees to fall, but left more than sufficient for any crop, and made the trees look very healthy. However, last year I heard several accounts from thoroughly good authorities, of many buds having been destroyed, in some cases owing to too strong applications of Gishurst. I wished to test whether this had been caused by the dressing having been applied too late, when the trees were no longer at rest, so, when giving most of my trees their usual eight-ounce solution, I left a few for experiment later, when the buds should have begun to swell. Some of these were washed with eight-ounces strength of solution, and a few minutes afterwards the trees washed with water; others with four-ounces strength with no after-water-washing. The results were, that some buds were injured by the strong solution, notwithstanding the after-washing, which was not the case (except in the case of some half-dormant buds), with the weaker solution without water-washing.

The conclusions I have come to are, that eight-ounces solution to fairly strong trees thoroughly at rest is the best strength and safe for buds except, possibly, those of early Pears. That if this strength be applied after the wood begins to grow, some buds may be injured. That 4 oss. to the gallon is safe even when buds have begun to swell, and is, perhaps, the best strength for not strong trees and Pears, especially early ones.

These remarks apply only to pot trees in orchard-houses, of which only I have any considerable experience. For fruit trees on walls I believe a pound to the gallon, drenched over the tree and wall by means of a plasterer's brush, to be the best strength. Last year I was allowed to experiment on some trees on an old wall, which year after year had been so eaten up with blight that their fruit came to nothing. I operated on three of the trees, Plums, with strong solutions of Gishurst, with the result that the trees so treated were much improved in appearance, and bore some fine fruit. The good summer may have helped, but they looked healthier than their unwashed neighbours, and now the whole wall has been abandoned to me to have a strong Gishurst treatment, the result of which I will communicate on a future occasion.—GEORGE WILSON, *Gishurst Cottage, Weybridge.*

AMMONIA IN AIR OF PLANT-HOUSES.—I quite agree with Mr. D. Thomson as to the beneficial effects produced by the introduction of ammonia into our forcing-houses. I have for several years been in the habit of using in the evaporating-troughs a small quantity of liquid manure from the farmyard. I have used it during the past season for Pines, Vines, Peaches, and Figs, and I consider it one of the best preventives against red spider.—J. CROSS, *Gardener to Lord Ashburton, the Grange, Alresford.*

crop may be had from the latter for a couple of years or so, when the Cherry trees will be removed either to another house or a wall, and the Vines be allowed to occupy the whole house. One great lesson to be learned at Trentham is, that nothing is done and no change effected without the matter having previously been looked at in all its bearings, and especially those having reference to economical and prudential considerations. The fourth house was a Peach-house, also empty, and having only this peculiarity—that the back wall was studded instead of trellised; and the trees at the back, instead of going merely to the top of the wall, were bent over at the top, so as to form a curve of 2 feet or so under the span roof.

We now step out, and find the west side of the east wall covered with Pears, and fronted also with these upright cases, but without any heat as far as we recollect. Here the crop was excellent, and the collection of Pears very fine, there being frequently many sorts on one tree and bearing profusely, as shoots with fruit-buds had been used frequently for grafting, and the scions were chiefly inserted on the sides of the main branches—a good plan, too, for rendering unfertile trees fertile. The only difficulty was in keeping the sorts distinct in the gathering. The fruit was much larger than usual, and some of them attain an extraordinary size under glass; but as a rule Mr. Henderson does not consider them quite equal in flavour to those grown on the open wall.

The north aspect of the south wall is appropriated to Cherries, Plums, &c., and the south side is covered with these upright cases from end to end, the length being from 630 to 640 feet. These are devoted to Peaches and Nectarines, and I think in part to Apricots, and at the end of August contained a great number of most excellent fruit, among which the Barrington and Walburton Admirable Peaches, and the Elruge and Pitmaston Orange Nectarine, were the most conspicuous for their size. Many splendid ones had been gathered for the Crystal Palace Show, on the 1st of September, where they stood in the first ranks of honour. Many fruit trees in pots are grown in front of these houses, where there is not a trellis.

In front of this fine wall is a large space of ground, even now called the "long nursery," but having nothing of the nursery about it, except the fact that thousands upon thousands of nursery bedding plants are turned out here every year to contend with the weather, and, if possible, thrive and show off all their perfections to the very best. The post of honour amongst these is assigned to two ribbon-borders about the same length as the wall—the one next the houses, and the other on the opposite side of a fine gravel walk between them. Beginning at the Box edging the back border is thus filled—3 inches from the Box is kept clear, then a foot wide of Cerastium, followed by Golden Chain, Scarlet Geranium, Feverfew, Trentham Rose Geranium, tall brown Calceolarias and Pentstemons, mixed; Gladiolus, in full bloom at the crest, the plants having been forwarded in pots; and then mixed Stocks, Cineraria, and an edging of Thrift. The opposite bed was in span-roofed shape, and thus the rows run from the Box:—Cerastium, Lobelia speciosa, Manglesii and Brilliant Geranium, mixed; Prince of Orange Calceolaria, and Purple Nosegay Geraniums, mixed, or alternate plants of each; tall brown Calceolaria, and Shrubland Rose Petunia, mixed, which made the centre row; the other side, skirted by grass, being just a counter-part of the above. The rains had lashed these borders very much, and the Calceolarias had been greatly injured; indeed, Mr. Henderson said they had not been quite up to the mark this autumn, but, nevertheless, the borders looked well, greatly enhanced by the beautiful walk, and the artistic manner in which the Cerastium was managed, regular and set throughout, and yet nothing stiff about it, and greatly relieved by the three-inch space of dark earth between it and the green Box edging. If we had not seen these borders we might have left the Cerastium to come to the Box edging, but now we are convinced that the open space of 3 inches it gives to the whole an artistic charm. Beyond, to the south of this front border, is a grass avenue, on which are spaced oblong beds filled with flowering plants, the beds being alternately with Holly, Berberis, and microphylla. These beds are

massive shrubberies, through openings in which peeps are obtained of the pleasure ground scenery.—R. F.

(To be continued.)

GLADIOLUS.

I HAD not intended to add another word to this controversy, but as your correspondent somewhat appeals to me I must perforce answer.

I. I did not say that derivatives followed the rule of the words from whence derived, but that diminutives did.

II. I did not intend to say in one place that the first syllable was glad and in another glade; but that as it was derived from gladius, I should throw the accent, whatever there was, on the first syllable.

III. I did not say it was a barbarism to say Gladiolus, but to make it Gladilus, as if no "o" was in the word, which is Mr. Beaton's pronunciation.—D., Deal.

PROPAGATING VINES FROM EYES.

HAVING a wish to propagate Vines from eyes in the spring, would you favour me with your advice as to the best method of doing so? I have a vinery which I intend to start at the end of January, and a circular flue of fireclay runs up through the house. Would a pit made on the top of the furnace with 6 or 8 inches of sand or rubble stones at the bottom, with about 2 or 2½ feet of tan above the stones be a suitable place for the purpose?—D. P. B.

[The plan which you propose for striking your Vine-eyes would answer very well. There are, however, two or three evils which are likely to require being guarded against in forming a pit immediately over your furnace, by which it is presumed that the pit is proposed to be made over the part of the flue next the fireplace where the greatest heat is invariably to be found. In the first place, you must guard against too great an amount of heat, which would cause the buds to break weakly. The bottom heat, should not exceed 80°. A thermometer plunged in the tan will, therefore, be necessary. It is also to be feared that the position of the pit which you propose forming will be too far from the glass, which in conjunction with a high bottom heat would be the very worst position possible for Vine-eyes after they had broken into growth. But if you can raise your pit so as to be within a couple of feet or so of the glass and not under the shade of other Vines, your plan with ordinary attention will do very well.]

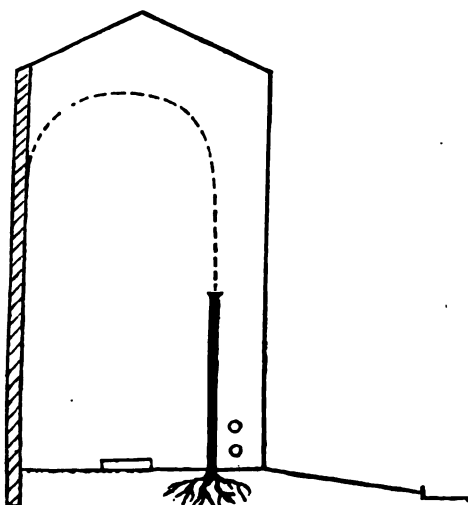
We do not, however, consider bottom heat an indispensable requisite in raising young Vines from eyes, and never practise it ourselves unless when very early ripened Vines are the object, and which, of course, requires that they be pushed on rapidly early in the season. In ordinary cases the method we adopt with success is, to put the eyes to the number of about thirty into an eight-inch pot well drained and filled with equal parts of loam, leaf mould, and sand. The pots are then placed on a shelf near the glass in a vinery, which is to be started in February. Here they just get the temperature which is usual in starting established Vines, and they always break strongly and do well. As soon as they have made roots about 2 inches in length they are potted-off into four-inch pots, using a compost composed of half loam and half leaf mould. We prefer potting them off thus early, as there is less danger of their receiving a check by the roots being broken in potting-off; and they are put into eight-inch pots at first to save trouble in watering, crocking pots, &c., which when they are put singly into small pots is required to a greater extent.

If convenient we put them into a little bottom heat after potting them off, but are not very particular on this point if we can place them near the glass in any light structure where the night temperature ranges from 65° to 70°. In a bottom heat of 80° they will, however, come into growth sooner than otherwise; but Vines should not under any circumstances be left longer in strong bottom heat than is just necessary to give them a start after being potted-off. From this it will be inferred that the pit proposed is not necessary, and if far from the glass, would, therefore, be objectionable, and that the shelf in the vinery near the

alternately, and all the trees seemed to be in the finest order and full of bloom-buds, from a regular system of stopping, though, from the frosts in May, the crop was much thinner than usual. All the lean-to houses, and some of the upright ones, are on the west side of this walk. Another walk nearly divides the garden from east to west, and has an arch thrown over it 10 feet in height, with a width at base of from 6 to 7 feet. This arched walk, now well filled with Pear and other fruit trees, must be a pleasant promenade in a hot summer's day, and the fruit can also be easily seen and examined.

By the side of other walks we found narrow arched trellises 2½ feet at base, and 5 feet in height, as we noticed at Keele the other week, and whole quarters filled with various devices as to training Apple and Pear trees, &c., with beautiful standard and pyramidal Currant and Gooseberry trees, that produce fine fruit, whilst the ground can be worked comfortably about them. Close to the Pine-ground vinery we noticed also two rows of upright Pear trees, that might be called rope-of-onion trees, being from 8 to 10 feet in height, and the branches or spurs not more than a foot through, and regular in width all the way. The appearance of the spurs indicated that by such training and good management a great quantity of good fruit could be obtained in little room.

With this glance at the kitchen garden we will accompany our readers through its ranges of glass houses, taking the east side first, and beginning with the upright Trentham-houses, in the back range, in line with Mr. Henderson's residence. This range consists of four houses, each 66 feet in length. As the ground rises to the eastern boundary, there are ramps with proportionate steps from one house to another, these ramps averaging 24 inches in depth, some being less, and some more. The whole of the upright houses are similar in size, and all are placed against walls. There can be no doubt as to the elegance of their appearance, and as little question that in the hands of Mr. Fleming, and now under the management of Mr. Henderson, they thoroughly answer the purpose, so far as plenty of good fruit is concerned. At first I believe they were chiefly intended for protection, as orchard-houses now are, but now they are mostly heated by hot water. They are all furnished with neat, narrow slate paths in the centre, are 6 feet in width, 10 feet high at back wall and front glass, the span-roof being about 15 inches higher at the apex, and one side of the span opens with lever rod. The upright front sashes are wide, with large squares of glass, and move easily behind each other by wheels running in a groove, so that abundance as well as little air in front may be given. In several of the houses there are also louver boards beneath the plate on which the sashes rest.



The back wall is covered with fruit trees trained either to a trellis, or oftener to nails as studs driven regularly into the wall. Trees are also planted in front, and trained to a trellis from 16 to 18 inches from the glass, and 4½ feet in

height. At that height it is found there is abundance of light to colour the fruit at the base of the back wall; in fact, Grapes in very shady places were exceedingly well coloured. Besides this upright trellis in front, an arch a foot in width is taken across from it to the back wall at every 12 feet, which gives these houses an elegant appearance as you look along them. It is also almost uniformly the case, that whatever the tree, Cherry, Plum, Peach, or Vine, these arches produce the very best fruit. The dotted line in the section will give some idea of these arches as we recollect them. Mr. Henderson has tried them nearer than 12 feet, but then he considered the back wall suffered. Having proved conclusively that the front trellis and these arches at 12 feet apart do no injury to the back wall, I would be glad if Mr. Henderson would set apart one house entirely to the front trellis, and arched all the way along to the back wall, which would then be useless for fruit, and report the result, not merely as to appearance, but as to the question of profit and loss, a matter which in all its bearings is nowhere more rigidly studied than in these gardens.

The outside borders of these houses, besides being drained, slope considerably to the walk. The first house is filled back and front with Plum trees, from which the fruit was all gathered in June; the short-jointed wood, the prominent well-swelled buds, and the leaves now turning yellow, being everything that could be desired. The second house was filled with Peach trees, the crop all gathered, this being the fourth house, and the wood getting in excellent order. The third house was a vinery. One rod is taken along the front at 4½ feet from the floor, and the bunches hang down from it, but the side shoots from the Vines help to fill up the space, and there is the arch across at 12 feet apart. At one end the front was thinly covered, and yet there were some huge bunches of the Marchioness of Hastings against the back wall. Against the wall were fine bunches of Lady Downes' as black as black could be, and there was also a fine crop of the White Tokay, which Mr. Henderson prefers much to the Trebbiano and Raisin de Calabre for late keeping, having frequently had it fine from late houses in April and the Lady Downes' in March. In this house the wood was strong, short-jointed, with large round prominent buds. The fourth house was devoted to Cherries, the leaves browning, the wood hard, and the buds strong and prominent; this house bore a heavy crop in April. On examining the short stubby shoots we found that nipping and stopping had very seldom been resorted to, the heavy crop having rendered such care and attention unnecessary. In these houses no part of the ground is ever seen all the winter, the bottom being filled with bedding plants; and there, until the houses are regulated for their respective crops, abundance of air can be given in mild weather, and a little heat in the pipes keeps them all right in winter. Even in this splendid place the most is made of every bit of glass at all times.

In the front range, beginning again at the west end, next to the garden residence, we come first to a Peach-house, the third in succession, from which all the fruit had been gathered. The next was an early vinery, also in a state of rest. The heating being insufficient, pipes were placed along the back as well as in front. The Vines at the west end of the house not doing so well as Mr. Henderson wished, owing chiefly, as he believed, to a great accumulation of moisture, the front ones were raised and planted in fresh material against the back wall. The outside border was removed, and well drained, and we saw the process going on for raising the border much higher than before. For this purpose the front pipes were elevated fully 20 inches higher. A slate was put down to separate the inside from the outside border, and prevent the roots in the meantime mingling together. Fresh Vines will be planted in the outside border, and when these are well established the inside border and the back pipes and floor will also be raised; and thus, whilst securing the best treatment for each, both back and front, the house will never be destitute of a crop. The third house was a Cherry-house; and here much the same method will be followed, as it is to be made into a late house for Lady Downes' Grape. The new border for the Vines is making in front in much the same way. The Vines will be left pretty much to themselves until established, so as not to have more heat than will suit the Cherries, so that a

crop may be had from the latter for a couple of years or so, when the Cherry trees will be removed either to another house or a wall, and the Vines be allowed to occupy the whole house. One great lesson to be learned at Trentham is, that nothing is done and no change effected without the matter having previously been looked at in all its bearings, and especially those having reference to economical and prudential considerations. The fourth house was a Peach-house, also empty, and having only this peculiarity—that the back wall was studded instead of trellised; and the trees at the back, instead of going merely to the top of the wall, were bent over at the top, so as to form a curve of 2 feet or so under the span roof.

We now step out, and find the west side of the east wall covered with Pears, and fronted also with these upright cases, but without any heat as far as we recollect. Here the crop was excellent, and the collection of Pears very fine, there being frequently many sorts on one tree and bearing profusely, as shoots with fruit-buds had been used frequently for grafting, and the scions were chiefly inserted on the sides of the main branches—a good plan, too, for rendering unfertile trees fertile. The only difficulty was in keeping the sorts distinct in the gathering. The fruit was much larger than usual, and some of them attain an extraordinary size under glass; but as a rule Mr. Henderson does not consider them quite equal in flavour to those grown on the open wall.

The north aspect of the south wall is appropriated to Cherries, Plums, &c., and the south side is covered with these upright cases from end to end, the length being from 630 to 640 feet. These are devoted to Peaches and Nectarines, and I think in part to Apricots, and at the end of August contained a great number of most excellent fruit, among which the Barrington and Walburton Admirable Peaches, and the Elruge and Pitmaston Orange Nectarine, were the most conspicuous for their size. Many splendid ones had been gathered for the Crystal Palace Show, on the 1st of September, where they stood in the first ranks of honour. Many fruit trees in pots are grown in front of these houses, where there is not a trellis.

In front of this fine wall is a large space of ground, even now called the "long nursery," but having nothing of the nursery about it, except the fact that thousands upon thousands of nursery bedding plants are turned out here every year to contend with the weather, and, if possible, thrive and show off all their perfections to the very best. The post of honour amongst these is assigned to two ribbon-borders about the same length as the wall—the one next the houses, and the other on the opposite side of a fine gravel walk between them. Beginning at the Box edging the back border is thus filled—3 inches from the Box is kept clear, then a foot wide of Cerastium, followed by Golden Chain, Scarlet Geranium, Feverfew, Trentham Rose Geranium, tall brown Calceolarias and Pentstemons, mixed; Gladiolus, in full bloom at the crest, the plants having been forwarded in pots; and then mixed Stocks, Cineraria, and an edging of Thrift. The opposite bed was in span-roofed shape, and thus the rows run from the Box:—Cerastium, Lobelia speciosa, Manglesii and Brilliant Geranium, mixed; Prince of Orange Calceolaria, and Purple Nosegay Geraniums, mixed, or alternate plants of each; tall brown Calceolaria, and Shrubland Rose Petunia, mixed, which made the centre row; the other side, skirted by glass, being just a counterpart of the above. The rains had lashed these borders very much, and the Calceolarias had been greatly injured; indeed, Mr. Henderson said they had not been quite up to the mark this autumn, but, nevertheless, the borders looked well, greatly enhanced by the beautiful walk, and the artistic manner in which the Cerastium was managed, regular and flat throughout, and yet nothing stiff about it, and greatly relieved by the three-inch space of dark earth between it and the green Box edging. If we had not seen these borders we might have left the Cerastium to come to the Box edging, but now we are convinced that the open space of 3 inches off, gives to the whole an artistic charm. Beyond, to the south of this front border, is a grass avenue, on which are placed oblong beds filled with flowering plants, the beds being edged alternately with Holly, *Rosa aquatilis*, and *Lotus microphylla*. The beds are

massive shrubberies, through openings in which peeps are obtained of the pleasure ground scenery.—R. F.
(To be continued.)

GLADIOLUS.

I HAD not intended to add another word to this controversy, but as your correspondent somewhat appeals to me I must perforce answer.

I. I did not say that derivatives followed the rule of the words from whence derived, but that diminutives did.

II. I did not intend to say in one place that the first syllable was glad and in another glade; but that as it was derived from gladius, I should throw the accent, whatever there was, on the first syllable.

III. I did not say it was a barbarism to say Gladiolus, but to make it Gladilus, as if no "o" was in the word, which is Mr. Beaton's pronunciation.—D., Deal.

PROPAGATING VINES FROM EYES.

HAVING a wish to propagate Vines from eyes in the spring, would you favour me with your advice as to the best method of doing so? I have a vinery which I intend to start at the end of January, and a circular flue of fireclay runs up through the house. Would a pit made on the top of the furnace with 6 or 8 inches of sand or rubble stones at the bottom, with about 2 or 2½ feet of tan above the stones be a suitable place for the purpose?—D. P. B.

[The plan which you propose for striking your Vine-eyes would answer very well. There are, however, two or three evils which are likely to require being guarded against in forming a pit immediately over your furnace, by which it is presumed that the pit is proposed to be made over the part of the flue next the fireplace where the greatest heat is invariably to be found. In the first place, you must guard against too great an amount of heat, which would cause the buds to break weakly. The bottom heat, should not exceed 80°. A thermometer plunged in the tan will, therefore, be necessary. It is also to be feared that the position of the pit which you propose forming will be too far from the glass, which in conjunction with a high bottom heat would be the very worst position possible for Vine-eyes after they had broken into growth. But if you can raise your pit so as to be within a couple of feet or so of the glass and not under the shade of other Vines, your plan with ordinary attention will do very well.]

We do not, however, consider bottom heat an indispensable requisite in raising young Vines from eyes, and never practise it ourselves unless when very early ripened Vines are the object, and which, of course, requires that they be pushed on rapidly early in the season. In ordinary cases the method we adopt with success is, to put the eyes to the number of about thirty into an eight-inch pot well drained and filled with equal parts of loam, leaf mould, and sand. The pots are then placed on a shelf near the glass in a vinery, which is to be started in February. Here they just get the temperature which is usual in starting established Vines, and they always break strongly and do well. As soon as they have made roots about 2 inches in length they are potted-off into four-inch pots, using a compost composed of half loam and half leaf mould. We prefer potting them off thus early, as there is less danger of their receiving a check by the roots being broken in potting-off; and they are put into eight-inch pots at first to save trouble in watering, crocking pots, &c., which when they are put singly into small pots is required to a greater extent.

If convenient we put them into a little bottom heat after potting them off, but are not very particular on this point if we can place them near the glass in any light structure where the night temperature ranges from 65° to 70°. In a bottom heat of 80° they will, however, come into growth sooner than otherwise; but Vines should not under any circumstances be left longer in strong bottom heat than is just necessary to give them a start after being potted-off. From this it will be inferred that the pit proposed is not necessary, and if far from the glass, would, therefore, be objectionable, and that if a shelf is the case, and of the same size as the

glass is available, or can be put up, bottom heat is not considered necessary unless when it is desirable to push on Vines early in the season, with the view of ripening them early for the purpose of early forcing in the following season.

To grow your Vines well after they are well rooted in four-inch pots, shift them into eight-inch pots, and keep them in a light place with a night temperature, after the middle of May, of 70°, with a moderately moist atmosphere. If required for planting purposes as permanent Vines, eight-inch pots are quite large enough, a well-ripened cane with plenty of fibry healthy roots being what is required, and not thickness of growth. For fruiting in pots they should be shifted into 12-inch pots, in which with feeding by liquid manure they will make splendid canes.—D. T.]

SOME GARDENS WORTH SEEING.

DURHAM.

Name.	Proprietor.	Gardener.	Station.
Grindon Hall ...	John T. Alcock, Esq.	Mr. J. Archer	Sunderland.
Aahburn	E. Backhouse, Esq.	Mr. Hardey	Sunderland.
Underlife	James Allison, Esq.	Mr. J. Cain	Sunderland.
Eden House	George S. Ransom, Esq.	Mr. Burn	Sunderland.
Creswell	John Hay, Esq.	Mr. J. Taylor	Sunderland.
Humelton Hill Water Company		Mr. J. Lamb	Sunderland.
Cleodon Hall ...	C. T. Potts, Esq.	Mr. Simpkins	Sunderland.

HEATFORDSHIRE.

Ashridge	Earl Brownlow	Mr. Sage	Berkhamstead
The Hall	T. Curtis, Esq.	Mr. Dibbins	Berkhamstead
Gaddenden Park	J. F. Moore Halsey, Esq.	Mr. Dunbar	Boxmoor.
Beechwood	Sir T. Sebright, Bart.	Mr. Speary	Boxmoor.
Westbrook	T. Rider, Esq.	Mr. Tranton	Boxmoor.
Shenditch	C. Longman, Esq.	Mr. Wallam	Boxmoor.

SALE OF CHINESE PLANTS.—The following prices were realised at the sale at Mr. Stevens's on Tuesday and Wednesday last. *Abies Kamperi* from 10s. to £1 10s. each; *Woodwardia orientalis*, 15s. Lots of six *Pinus Bungeana* brought from 11s. to 17s. per lot, of *Bambusa variegata* 19s. and £1, of *Torreya grandis* 5s. to 19s.; of twenty-five *Chamserops Fortunei* 9s. to £1; of twelve *Lastrea opaca* and *atrata* 10s. and 11s.; of ten *Deutzia crenata flore pleno* 6s. to 9s.; similar lots of *Iris laevigata* 5s. to 9s.; of five *Woodwardia japonica* 11s.; and of twelve *Lonicera aureo-reticulata* 5s. to 7s. per lot. Altogether the proceeds of the two days' sale amounted to upwards of £350.

WORK FOR THE WEEK.

KITCHEN GARDEN.

KEEP the heaps of compost well turned over, as the time is approaching when every advantage must be taken of frosty mornings to wheel it over the land. As a general rule, ground that is very deeply trenched should be manured after the trenching, and the manure forked in, except in the case of tap-rooted plants, which will require the manure to be trenched in at the bottom, and not incorporated with the surface soil. *Cabbage*, earth-up those planted for Coleworts, for winter and early spring use. Look over the principal plantations frequently to see if slugs attack the plants; if they are numerous lay a quantity of *Cabbage* leaves on the ground, and examine them daily; a pail of hot water or some lime may be taken round at the time they are examined, and slugs shaken into it; thus many thousands may be destroyed at this season. *Celery*, earth-up that intended for winter use a good height. As soon as the soil becomes a little dry it will be necessary to attend to this as early as an opportunity offers, as the frost may set in shortly and do much mischief. *Endive*, continue to blanch it by tying up. *Potatoes*, the whole of the main crop should now be taken up and carefully stowed away. *Peas*, a few of these, and also Broad Beans, may be sown in a warm, dry part of the garden. If any esculent roots, such as Beet, Carrots, Scorzonera, Salsafy, &c., remain in the ground they should be taken up immediately. Dress *Asparagus*-beds; manure, trench, or ridge all vacant ground, bearing in mind the spring crops, for which each portion of the ground is to be prepared.

FLOWER GARDEN.

During the present month more than common attention is required to preserve this department from the desolating

effects of the weather, when the sweeping-up and cleansing of one day may be effaced by the storms of the next. Badly-drained or ill-constructed walks will suffer from depositions of mud, which should be corrected as soon as possible to allow of what may be called the enjoyment of fresh air and exercise in favourable weather. The weather is still favourable for executing alterations, and where these are in hand they should be prosecuted with the greatest possible dispatch. Planting and the removal of large evergreens cannot be finished too soon, for it is of the utmost importance that the plants should be afforded some chance of making fresh roots before the trying winds of March. See to small plants as well as large being secured against wind, for these are often greatly injured by being blown about after planting, which a small stake and a few minutes' work would prevent. Those who purpose making additions to their collection of *Roses* should do so at once, as there will be a better chance of obtaining good plants now than after the nursery stock has been repeatedly picked over. The present season is also very favourable for planting all but tender sorts, which had better be kept under glass until next May. In preparing ground for *Roses*, let it be trenched at least 2 feet deep, and let a heavy dressing of manure be well incorporated with the soil to the full depth. It is hardly possible to make the soil too rich for any kind of *Rose*, particularly the autumn-blooming kinds. Look over the herbaceous borders, and make any alterations that may be intended there, taking up and dividing any of the coarse-growing plants that may be inclined to encroach too much upon their neighbours. The modern system of gardening is fast driving this class of plants out of cultivation, but many of them are really beautiful, and if they were more largely grown many gardens would not have that naked appearance in spring which is too often seen. Sweep and roll grass frequently, and keep gravel walks hard and smooth by frequent rollings.

FRUIT GARDEN.

Let there be no lack of attention in the fruit-room at present, and during the first few weeks after gathering more is required than all the season afterwards. Give just sufficient air to carry off the damp, but nothing more, as allowing dry winds to blow over the fruit would only cause shrivelling. Strawberries for early forcing to be placed where they can be protected from drenching rains. Proceed with former directions as regards planting-out fruit trees of all sorts. Cast an eye over the trees in the orchard, and see if there is a necessity for the judicious thinning-out of the branches.

GREENHOUSE AND CONSERVATORY.

Chrysanthemums will now require abundance of air, with a liberal supply of manure water. Great care to be taken never to allow them to flag for want of water. Look over the plants frequently, such as *Leschenaultias*, *Boronias*, &c., that are liable to suffer from damp and mildew. Keep *Cinerarias*, and other softwooded stock clear of green fly, and endeavour to secure stocky plants, by affording them sufficient pot-room, and admitting fresh air freely whenever the weather permits. If such things as *Geraniums*, *Cinerarias*, and herbaceous *Calceolarias* must be wintered in the same house as the *Heaths* and other hardwooded plants, they should be kept as much as possible by themselves, as they will require a somewhat closer temperature than hardwooded plants; but where circumstances admit of it, these should occupy a house or pit by themselves. *Cinerarias* and *Geraniums* intended for late blooming will do very well in a cold pit, if the weather should not prove very severe, but those intended for blooming early should be placed at once where fire heat can be used at will, so as to be able to preserve the foliage from damp. *Roses* for early forcing should be pruned by this time, and placed where they will at least be free from heavy rains. Where American and other shrubs are used for forcing, these should be taken up and potted without delay, placing them in a cold pit until they are wanted for forcing, or in a turf-pit, where they can be protected from severe weather by straw mats or other coverings.

PITS AND FRAMES.

All flower-garden plants, such as *Petunias*, *Verbenas*, *Calceolarias*, &c., intended to be wintered in cold frames or pits should now have strict attention. Let the supply of

water be limited to that quantity only which is requisite to keep them from flagging, and let them be frequently gone over, and all dead leaves removed. Give them all the air possible during the day, if dry, and shut up tolerably early in the afternoon. Finish potting Dutch bulbs if not already done.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

For general details in all departments we would refer to last and previous weeks, as the work has chiefly been of a routine character. One object of importance now is to secure

SALADING FOR THE WINTER.

For this purpose half or three-parts-grown Cabbage Lettuce should be taken up with good balls and planted about 10 inches apart, so that the air can pass freely between them, in cold pits or frames. There they should have air given liberally every day, and the glasses left off in fine days, and air given at night, except in frosty weather. The harder they are kept and the drier the atmosphere in the muggy weather of winter the better will the plants do, and the more free will they be from everything like mildew. For this purpose, in transplanting them place them in trenches, water pretty well at the root, and cover up so as to have dry earth on the surface. To help this still more, burnt clay or dry charred refuse may with much advantage be strewn between the plants after planting. Last season we noticed a clever young man drenching such a planted bed, by sending a stream over it from the rose of a watering-pot, held at least a yard above the plants. We were not surprised to learn that most of the plants rotted or mildewed, and, of course, it was a misfortune, but no one was to be blamed.

Endive will stand well in ordinary winters on sloping banks. In fact, the best for standing we ever had was planted on ridges 2½ feet apart, the plants inserted on the top of the ridge. A few leaves or a little rough hay not only blanches them, but keeps out the frost. On the top of these ridges and on sloping banks with the surface stirred, Endive in general winters will stand green until spring, ready then to be blanched. To make sure, however, a lot of plants not quite full grown should be taken up with balls and planted thickly under protection. Where glass cannot be had, straw, cloth, canvass, and wooden covers, such as those used at Keele Hall and Trentham for borders, &c., answer remarkably well, as they can be moved off in fine weather; and the covers especially, even when the weather is unsettled, may be elevated in front, or even back and front, and allow air and light too to pass freely beneath them. For all such purposes we would prefer wooden covers if we could obtain them. It is now getting on for twenty years since we recommended them to a gentleman of very refined taste, who abominated the litter from mats and even straw covers, and we lately saw them very little the worse for the wear and tear they had undergone. They were made of three-quarter-inch best deal, with three cross-pieces beneath, and a ledge 1 inch deep all round, to rest on the back and the rafters between lights, as they were previously used for covering pits and frames, but they came in for all kinds of protection. As far as we recollect, they were 6½ feet by 4, well painted and neatly finished, and cost altogether about 7s. each—a good outlay at first; but they were neat, and to secure the same protection from mats would have cost about as much in ten years, and nothing to look at but tatters, instead of a nice cover as good as ever.

Chicory also makes an excellent salad, and when left in the ground should have some branches laid over it, to be covered with straw in severe weather, in case there should be a difficulty in taking it up, or the roots may be taken up and packed loosely in earth until they are wanted. A good plan to get it quickly is to fill a 12-inch pot with good roots—say eight or ten, water well, set the pot in a warm dark place, or in any warm place provided you place an empty similar-sized pot over it, daub round at the junction with clay putty, and daub up all the holes securely to exclude light, and cut when the yellow leaves are not more than 6 or 7 inches long. For regular supply no plan is neater or better than using a narrow barrel or upright box, with holes three-quarters of an inch in diameter, and even 1 inch apart all round the

the plants in layers in the barrel or box, packing with earth and giving a little water as you go on, merely leaving the crowns of the plants or roots outside the holes, and then place the box in a dark cellar, and, just as in the above case, cut before the leaves grow too long. Six inches is a good size, if longer they become drawn and insipid. When hard driven we have taken up Dandelion roots, where we knew they grew strong, by the sides of a highway, and but for size think them quite as good as the Chicory. Our own impression is, that the Chicory is a shade the better of the two, that Endive is better than either, and a good Lettuce best of all.

Where Rampion is much esteemed, a parcel of roots should be taken up and packed in sand ready for use. Took means to protect Radishes, and will sow a bed under glass with a slight bottom heat, as about the new year these will be more tender than those sown in autumn, however protected. Nothing is better than Wood's Early Frame, though every district has its own peculiar favourite kind. The smaller the tops, other requisites being equal, the better the variety, as thus great quantities can be obtained in little space. After the seedlings appear, the plants cannot have too much air in favourable weather. If kept close they will come with long unsightly necks. In most families Beetroot is relished when of a middling instead of a large size. It will grow to little more advantage now, and therefore should be taken up before frosted. In taking up, use strong forks, so as not to break a fibre if possible, and merely twist off the long leaves from the crown. It must also be boiled in that state, as the smallest incision is fatal to everything like quality. A great object in most establishments during winter is a good supply of small salading, but for what reason we know not. We have not been required to do much in this way for some time, but it is one of those matters in which it is easy to commence and have a good supply in a short time, as nothing but the seed-leaves and the smaller finer leaves alone are used, such as Mustard Cress, American Cress, Rape, &c. These may all be grown freely where there is protection from frost; but, on the whole, small narrow boxes—say 2 feet in length, 4 inches deep, and 4 inches wide—are as good as any. Small four-inch pots are also very good. These should be half filled with roughish leaf mould and loam, and filled up to within an eighth of an inch of the top with sandy loam and leaf mould pressed level, the seeds sown thickly, pressed level on the mould, watered, and set in a dark place, or covered with a cloth or paper. We have dusted the seed with a little sand, but it makes the seedlings hard to wash. When the seeds are merely pressed level on the surface, and not pressed into the soil, the seedlings rise clear and free from grit, and in most cases water would injure rather than help them. We think, too, that when served separately, the salading will look best with the leaves all one way, instead of the head and heel way, in which it is generally presented.

We suppose we must finish with Celery. We have not, since the end of August, taken up a single head but what has been in first-rate order for the table for cheese or salading. Not one head has been run or hurt in any way. From what we said formerly, we have had several private letters complaining of the Celery bolting and running, and being diseased, &c., and one or two, in badinage we presume, ask how much it would cost to buy the secret of preventing early Celery from bolting. Well, as to secrets, nobody that wants a secret kept about gardening should tell us about it, for, if it is worth being made known, we are sure to tell everything about it. Years ago, and more recently, we have stated everything we knew about the matter, and may repeat all again in time for next season, as the reasons would not apply now. Took the opportunity of dry days to add a little more earth to the plants in beds. We have no objection to bit-by-bit earthing-up now, but we would none of it in August and September. In stiff soils, instead of earthing-up very high, it is better to have some stubble or tree leaves placed lightly between the plants, so that lets the air in and keeps the light out. The leaves should have a little litter over them. Put a few Potatoes in small pots to forward them.

FRUIT GARDEN.

As already referred to in late Numbers, no time should be lost in sowing, transplanting, root pruning, or making fresh

plantations of fruit trees. The modes have frequently been alluded to. Forked over some rows of Strawberries that were not previously done, not going deep, however, but merely loosening the surface for 2 or 3 inches. Prefer the steel forks for this purpose far before any hoeing. Pruned fruit trees as we could get at them, opening up the centre and cutting back some large branches that had become bare of buds below. Painted and tied out of the way Vines in pit that had been pruned some time. The paint was chiefly sulphur, clay, and cowdung. The sooner such work is done the better, as the longer the stems are thus covered the more likely are all eggs, &c., to be smothered. As already intimated, those starting Vines now must use heat moderately and moisture abundantly.

Pruned and washed with hot water and soap trees in early Peach-house, now exposed. Washed all the walls and wood-work with hot soap-water, and painted the trees with a paint made of tobacco-water, soft soap, sulphur, soot, lime, and cowdung. The tobacco, half a pound, with half a pound of soft soap, a quarter of a pound of glue well boiled in two gallons of water, equal portions of sulphur, soot, and lime, were made into a paste, and about double portions of clay and cowdung added. These quantities made in all about four gallons of mixture, which from experience we find will stick well. We would have preferred the trees being frosted before painting them, and for that purpose we slightly syringed them before dark on nights when we expected frost, but we did not get enough to ice or freeze the moisture outside of the trees. We think that this freezing is capital for destroying insects; but we must wait no longer, as we want the floor of the Peach-house for storing lots of Geranium cuttings just struck, and we want the places in which they are for other things. Before placing these on the floor in boxes we will remove a couple of inches or so of the surface soil, fork-up, water with hot water, and then give a layer of cowdung, covered over with fresh mould. All the woodwork of trellis, &c., will be done with quicklime. Into such a place *Ageratum*, *Amplexicaulis Calceolarias*, and *Heliotropes* should be put, as they will not stand much frost, and are better if not below 35°.

We at one time used to commence our first Peach-house early in November; but now we let it come on in the spring naturally, and, as the trees are used to it, they generally break early enough without any heat except excluding frost, to bring the fruit in in June or the end of May. With sharp eyes and glasses to help them, we could discover no insect on the trees, scale or anything else; but there were many little scaly pieces on the back wall where the whitewashing, &c., had peeled off, and underneath these we found traces of insects and eggs too: hence the importance of scraping off all these scaly pieces and giving a good washing with hot lime considerably darkened, as the lime itself would be too white and reflect the heat and light too much. A little lampblack, pounded and made into a paste, will go a great way in this direction. Painted also the hot-water pipes we could get at, using for this purpose lamp-black, oil, and some whitelead to give body. In all houses where much heat is wanted, this painting of the pipes should be given in time, that they may be well dried and sweet before there is much heat in the pipes. Nothing is more unpleasant than to go into a house and be next to knocked down by such an effluvia, and plants like it as badly as ladies do. This painting is more required for preserving the pipes when sulphur is much used in forcing or during growth.

Picked-out a few berries from Grapes that were damping, and these should be looked to every day, as if one affected berry is left there will soon be three, and ere long half a dozen, so quickly does the damp spread. Have a brisk fire now once every day, and air on to keep the atmosphere dry, and if the house is shut up at night let the fire out. As yet we have never been without air at night in these late houses: that air has chiefly been at the top of the back wall. Many experiments tend to show that there are a great many misconceptions as to the circulation of air. No doubt it is good to have it all over the house, heated before it enters by passing over pipes; but we are satisfied that outlets at the highest points in lean-to-houses will soon cause a circulation in all the confined space.

ORNAMENTAL DEPARTMENT.

We meant to say something about greenhouse stoves, but

would willingly request our readers to study what Mr. Keane says at page 335. When we used to force hardy shrubs we liked to pot them in spring, plunge them, mulch them, and properly water them all the summer. We have, however, done Lilacs, Rhododendrons, Roses, &c. in good style by now selecting plants standing thin with good buds. We took them up carefully, with balls if possible, and squeezed them into as small pots as they could be put into, using suitable soil and firming it well, and then plunged them out of doors into a slight hotbed of litter and leaves, covering the surface of the pots too, where the roots would have a temperature of from 60° to 75° and 80°. In a month or six weeks they might be taken into a house with a little bottom heat, and the extra flip to the roots caused the flowers to come strong and vigorous. Our out-door work much as last week. We have spoiled some of our best flower-beds by taking away the centres of pyramids, as we were afraid of frost. Among the best of these were fine plants of *Cassia corymbosa*, a dense mass of orange from bottom to top. We once tried them turned out in pots, but they gave no such massive corymbs of flowers as when planted out. We have also taken up a lot of Geraniums, and as we could not pot them or give them any fire heat, we pruned them well back to the hard wood, cutting off all the soft part, dipped the head in lime, and now we are packing them as thick as possible in a cold pit. We give a little water at the roots as we go along and firm the earth about them, and when done will throw a lot of charred and burned earth over them, say 2 inches. We shall be satisfied if these do not show a green leaf until the beginning of March.—E. F.

COVENT GARDEN MARKET.—OCT. 31.

The supply this morning was fair, but not so heavy as we have lately had to report; still it was quite sufficient to meet all requirements. *Crasanne* Pears are now coming in; and in Apples Cox's Orange Pippin, King of the Pippins, Ribston Pippin, and Golden Pippin afford the best samples. Kentish Cobs are bringing 65s. per 100 lbs., the very finest 70s.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples..... $\frac{1}{2}$ sieve	1	6	to	4	0	Mulberries.....quart	0	0	0
Apricots..... doz.	0	0	0	0	0	Oranges.....100	8	0	12
Figs..... doz.	0	0	0	0	0	Peaches..... doz.	0	0	0
Filberts & Nuts 100 lbs.	55	0	75	0	0	Pears..... bush	5	0	7
Grapes, Hamburga. lb.	1	6	5	0	0	dessert..... $\frac{1}{2}$ sieve	2	6	5
Hambro's, Foreign	0	9	1	6	0	Pine Apples.....lb.	3	0	6
Muscats.....	3	0	6	0	0	Plums..... $\frac{1}{2}$ sieve	0	0	0
Lemons.....100	8	0	12	0	0	Quinces..... doz.	1	0	2
Melons..... each	2	6	4	0	0	Walnuts..... bush	14	6	20

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad.....bush	0	0	0	0	Leeks.....bunch	0	3	to	0
Kidney .....½ sieve	0	0	0	0	Lettuce.....score	2	0	3	0
Beet, red .....doz.	1	0	1	6	Mushrooms.....pottle	1	0	2	0
Broccoli.....bundle	0	9	2	0	Mustd. & Cress, punnet	0	2	0	0
Cabbage.....doz.	0	9	1	3	Onions.....bunch	0	4	0	6
Capiscums.....100	1	3	2	0	pickling.....quart	0	6	0	8
Carrots.....bunch	0	6	0	8	Parley.....bunch	0	3	0	4
Cauliflower.....doz.	2	6	4	0	Paranips.....doz.	0	6	0	9
Celery.....bundle	1	6	2	0	Peas.....bush	0	0	0	0
Cucumbers.....doz.	6	0	12	0	Potatoes.....sack	5	0	8	0
pickling.....doz.	0	0	0	0	Radiates dos. bunches	1	6	2	0
Endive.....score	1	3	2	6	Rhubarb.....bundle	0	0	0	0
Fennel.....bunch	0	3	0	0	Savoy.....per doz.	0	9	1	6
Garlic and Shallots, lb.	0	8	0	0	Sea-kale.....basket	3	0	4	0
Gourds & Pumpk., each	0	0	0	0	Spinach.....sieve	1	6	2	0
Herbs.....bunch	0	3	0	0	Tomatoes.....½ sieve	2	6	4	0
Horseradish... bundle	1	6	4	0	Turnips.....bunch	0	3	0	0

TRADE CATALOGUES RECEIVED.

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Roses, Fruit Trees, Conifers, Trees, Shrubs, &c.* 1863-64.

B. S. Williams, Paradise and Victoria Nurseries, Holloway.—*Catalogue of New and Choice Pelargoniums—Select List of Gladioli.*

TO CORRESPONDENTS.

ASALIA INDICA (*Subscriber, Liverpool*).—You will find such directions as you require in the "Cottage Gardener's Dictionary;" and a good article by Mr. Fish in No. 613 of our First Series.

LEADEN PIPES (*A. Z.*).—Our correspondent wishes to know where he can obtain leaden pipes coated inside and outside with sulphate of potassium.

BOOKS (*A. B. C.*).—Glendinning's "Practical Hints on Culture of the Fine Apple" (Longman & Co.), Hemfrey's "Fundamentals of Botany." (*Constant Reader, Bristol*).—Sanders on the Vine.

DIELYTRA CUCULLARIA (A. E.).—This plant was introduced so far back as 1781 under the name of *Fumaria cucullaria*. It is figured in Curtis's "Botanical Magazine," t. 1127. It was in cultivation in 1810 as *Fumaria cucullaria*, and was commonly grown under that name when old-fashioned herbaceous border plants were in vogue. You are quite right in stating that it is scarce, but you will see from the above that it is no novelty, though the flowers are very singular. In the United States of America it is vulgarly known as "The Dutchman's Breeches," on account of the two horns at the base of the flower. In the open border it usually grows about 9 inches to 1 foot high, but, in poor soils it does not exceed 6 inches in height. When growing in very poor soil the flowers are nearly white, in stronger soil they are of a yellowish-pink, and when grown in loam and peat the flowers are of a delicate pink. We have seen it flowering beautifully in June planted in an ordinary herbaceous border, the soil being light, and rather sandy loam. We think your plant will prove to be *Dielytia eximia* (*Corydalis eximia* and *Fumaria eximia* of some), which is a very pretty plant with flesh-coloured flowers in June or July, growing 1½ ft. high. The close atmosphere of a cold frame will induce growth, but that free exposure to sun and air will be lacking, which is necessary to the ripening of the underground parts, on the thorough ripening of which depends the flowering stems appearing the following spring. If you turn your plant out in a sunny border, in poor rather than rich soil, we think you will be satisfied with the result. If on the other hand you desire to keep it in a pot, drain well, and use a compost of sandy peat half, light loam a quarter, and silver sand the remainder, placing the bulbs or roots a couple of inches below the surface. Water freely whilst the plant is growing, but after growth is completed gradually diminish the supply, and place the pot in the full sun, plunging it, however, to prevent the roots being dried up. Give no water after August, and keep dry rather than wet during the winter. With this treatment we think you will have no difficulty in blooming it, and if you succeed, we will thank you for a flower, for we are particularly fond of rare and curious plants.

HARDY AQUATICS (W. Robinson).—I regret to say the aquatics named by him are only to be had at some botanic garden. They were and probably are in some of the botanic gardens, Kew being the most likely place at which to obtain them.—GEORGE ABBEY.

CONSERVATORY FLOOR GREEN (Flora).—Dissolve 1 lb. of soda in 3 gallons of boiling water and pour it boiling upon the white stone floor. Scrub it thoroughly whilst wet with a scrubbing-brush, and then wash clean. If any green remains, wet the floor with soda water as before, and rub with pumice-stone until thoroughly clean.

RANUNCULUS CULTURE (J. S.).—Leave them in the soil, for it is too late to take them up now that they have made shoots an inch in length. Cover the beds with an inch of fresh soil, and your beds will take no harm. In future years take up immediately the foliage turns yellow, and store away in boxes in a cool dry place. Your other query shall have a reply as soon as we obtain some information promised to us.

WALTONIAN CASE (Amateur).—We do not know where this can now be seen except at its inventor's, J. Walton, Esq., a solicitor residing at Kingston-on-Thames. Of course no one would intrude upon him without permission.

EVERGREENS (E. C.).—There is no book devoted to the cultivation of Evergreens. The "Cottage Gardener's Dictionary" gives such directions, but it includes other gardening subjects. Your soil or subsoil must be very clayey or otherwise unfertile to kill "all your evergreens."

HEATING A MELON-HOUSE (A Reader).—To have early Melons, and early Melons in a house 15 feet by 11, you may, as you propose, have two beds on each side, which, after allowing 4 inches for the walls at the pathway, will each be 3 feet 8 inches in width—ample width enough for anything. Beneath each of these beds you should have two three-inch pipes to heat separately; or, to save expense, they may go right round and thus heat both beds at once. Then you had better have two three-inch pipes on each side for top heat, and these should be supplied with evaporating-pans. The bottom pipes should be so placed that after surrounding them with 6 or 8 inches of rubble there would be room for 15 to 18 inches of soil. We do not know the elevation of the house or we might counsel more. In such a short length we think you are right in having Cucumbers at back and Melons at front, and we presume both are to be trained to a trellis. But if the house had been 20 to 30 feet in length we would have proposed devoting one-half of the house to Melons and the other half to Cucumbers for reasons frequently given. We do not think you would do any good with Figs in such a house along with the Cucumbers, &c.; but if there is room enough above you might grow the Figs in both beds either in tubs or pots, or, what we would much prefer, with plenty of drainage and a foot or 15 inches of soil, and the plants turned out in the beds. You would need then no pipes for bottom heat, and to have Figs moderately early two four-inch pipes would be enough for top heat. To have them early, say in May, you would need three, or better say four of such pipes. Then you would get Figs from May to November. If you give more particulars we may be able to give further help.

LILY OF THE VALLEY DWINDLING (D.).—Either now or in spring just as the buds begin to move, take up the plants, divide them carefully into lumps about the size of your hand and plant carefully in well-moved soil, and with some rotten leaf mould in it. That will give size to the leaves and flower-stems. If the soil is light, firm it as much as possible among the fresh plants, and top-dress with rotten dung. It would be as well, however, to leave a piece not taken up, but remove the leaves, and cover with 1½ inches of rotten dung, through which the rains of winter will penetrate. In March rake this off, leaving only 2 inches of the most rotten. If you wished a few early flowers, you could select the most promising buds and fill a few pots with them as thick as you could cram them. Were the plants yours we would prefer moving them now. We would prefer the piece planting, but you might try a bit by tearing all the roots asunder and planting them separately, but this will require much more time and labour. We always find that the plants do best in rather firm soil; in light rich soil they grow rather too much to leaf.

SEA SAND NOT FLOWERING (Idem).—Most likely it needs a little amendment in the way of rotten dung, and a mulching all the winter. Most likely the plants suffered from dryness last summer.

NAMES OF INSECTS (A Reader).—Your "great grandfather thrips" proves to be one of the small rove-beetles, most probably *Oxytelus carinatus*, and it was described by the great naturalist Linnaeus in his "Systema Naturae."

EXHIBITION-STANDS FOR ROSES (G. W. W. Stowbridge).—Rose-stands should be 1 foot 6 inches broad, 6 inches high at the back, and 4 inches in front; length of box will vary according to the number of blooms. It is always a risk to move dormant buds. Success or failure will depend very much on the character of the winter.

LAMP-HEATING A PLANT-CASE (G. F. S.).—We will endeavour to tell you why the spirit lamp will not set in your little tank. First, the tank is too deep, half the depth would be better; your arch above the lamp should be depressed, so as to let more water rest there, and then the lamp should be lower. At present the flame of the lamp strikes merely against the top of your tank, and if the water is a little heated there, the heat will not descend to heat your 6 inches of cold water. You apply heat at top, when it ought to be communicated at the bottom; we can see that you will only have a chance by your present arrangement, by placing the flame a little lower than you now have the bottom of the lamp, depressing the semicircular top of the tank so as to have 2 inches of water there, and 3 inches elsewhere, and putting a cover round the lamp to prevent the heat escaping, whilst air for combustion is admitted. Without altering the depth of your tank you might also then do much by taking open tubes through the water, from your saddle-back roof, in middle. All our observation with such spirit lamps tends to show that they act most powerfully when the water is placed above them. For instance, with a hollowed-out tea-kettle so as to have 2 inches of water between the concave inside and the rounded outside, and flow and return pipes of 1 inch in diameter, and a good spirit lamp beneath it, we believe we could heat several of these cases, the pipes either going in the sand or in a tank of 2½ inches beneath the sand. Try what flattening the top of the saddle-back will do, and lowering the lamp and lessening the water; and if you do not succeed to your wish, boil some water elsewhere, reduce the depth of tank to 3 inches, and fill with hot water when necessary. You may succeed by this means, but you will never obtain heat enough by the present mode, because heated water will not easily descend into cold water. We have seen tanks 15 inches deep that were quite cool at the bottom, and yet very hot for a couple of inches at the top. If the cases were ones we would not use water at all, but have openings to insert three or four Child's Night Lights and other holes cut in one side of the tank to secure a circulation of hot air and sustain combustion. Nothing is gained by having water to heat by your lamp. We think that very likely your Camellia plant has had a check from want of watering.

PHILADELPHUS CORONARIUS (D.).—We have seen the *Philadelphus coronarius* in luxuriant health in all parts of the country, north, south, and midland.

DYING EVERLASTING-FLOWERS (Idem).—Everlasting-Flowers should be gathered before they are more than half blown, and dried in any place in the shade. We do not know what will prevent *Xeranthemum flower-stems* shrivelling a little, but the flowers are generally supported with a stick or a wire inside a small handful of stems. Probably some friends may give a better account of the mode of drying these flowers. Some of our friends by means of these, a few grasses, and a few evergreens, contrive to make their rooms very gay in winter.

FLOWER-BEDS (Idem).—Your cross planting of the flower-beds will do especially as respects the first group, if your bed 3, of Golden Chain consists of strong plants. In the second group, we would make 7 Yellow Calceolarias instead of variegated Alyssum; you might use the Alyssum strong as a centre to 8; then for 8, a Geranium, as Stella, would do better than Calceolarias for an edging of *Cineraria maritima*.

ACACIA GRANDIS NOT FLOWERING (J. M.).—Your plant has evidently grown very fast—too fast to come into a blooming state. Keep it another year in the same pot, and in other respects treat it as you have done this year; and when the pot is well filled with roots and the growth less luxuriant, it will doubtless flower. The cuttings having been removed from their source of luxuriant growth have, in consequence, been thrown into a blooming condition, and when your parent plant becomes less luxuriant it will bloom. We know of no other reason why it has not bloomed, while the cuttings from it have.

HEATING AN OUTSIDE PLANT CASE (A Regular Subscriber).—It is a great drawback being unable to cover the case. If the case were inside there would be no difficulty. Could a spiral tube from a gas-burner be taken through it? Perhaps the simplest plan would be to put two or three common bottles in it, when wanted, filled with water at about 160° or 180°. A gallon bottle of strong earthenware ought to keep such a place comfortable for the night. We would not use the water boiling in case it should break the bottle. A second might be used on a very cold night. We have described how a close vessel like a drawer might go under such a case and be supplied as needed with hot water. But we presume you could not get it at easily, and in a very severe night it might be frozen. Bottles of hot water will be the simplest mode.

SEA SAND (Omega).—This is no substitute for silver sand; white river, or even pit sand being better than it. Any Dublin nurseryman would supply you with any quantity of silver sand.

PEARS FOR WALL (Idem).—Jargonella, Beurré Superfin, Beurré d'Anjou, Marie Louise, Hacon's Incomparable, and Bon Chrétien. The Pears you allude to are early and late autumn Pears.

HEATING VINERY (Idem).—A flue will heat a house 30 feet by 12, but you must not expect to force early. We do not know where Mr. Stueber's treatment can be had. Apply to a bookseller.

VARIOUS (W. W.).—If you will send five postage stamps with your address you can have "Fruit Gardening for the Many" free by post. It contains full directions for all the pruning you mention. Fruit trees do not require such a supply of liquid manure as you seem to allow them. It makes them over-luxuriant. We cannot give an opinion about your Pear tree, as we do not know its state of growth. Fermenting dung & leaves are put over Sea-kale pots to force the plants; but there must be an abundance of the fermenting material. If this is done during the first week of November you may cut by Christmas. Neither ashes nor manure needed inside Sea-kale pots. If you do not force, a little long litter over them will be desirable.

NAMES OF FRUIT (Woodford).—1, Hollandbury; 2, Emperor Alexander; 3, Perry's Pearmain; 4, Marmalade Pippin; 5, Beurré de Rance; 6, Doyenné d'Été; 7, Autumn Colmar; 8, Winter Nellis. (E. S.).—Your fruit is certainly delicious, but you do not say the name you have it under. It appears to us like Doyenné d'Été; but that variety ought not to not set so early as this.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (*W. K. M.*)—1, *Athyrium Filix-femina*, var., perhaps laxum or pyramidale, but not in condition; 2, 4, *Lastrea dilatata*, var.; 3, *Lastrea simulans*; 5, *Scolopendrium vulgare*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

PENS AT BIRMINGHAM POULTRY SHOW.

I SHOULD esteem it a great favour if yourself or any of your readers could state on authority, whether it is the intention of the Managers of the forthcoming Exhibition of poultry at Birmingham to enlarge the pens devoted to the principal varieties of fowls that will then enter into competition. Even to the most casual observer it must have been evident at first sight that the show-pens latterly appointed at Birmingham for the reception of Cochins, Dorkings, Brahmas, Malays—in short, for every variety of the large breeds of fowls, have been decidedly too cramped in their dimensions, and without doubt a source of irrecoverable injury to the unfortunate birds, that for six or seven days and nights have barely room even to alter their respective positions without difficulty and great inconvenience to each other.

It is currently reported among poultry-fanciers that the Committee are resolved to confine the poultry exclusively to the "poultry bay," regardless of the amount of entries that may be obtained for next show within a few days of the time I am now writing. Until very recently such was not the regulation pursued—as Turkeys, Geese, Ducks, and some other classes enjoyed ample space in close contiguity to their (at that time) well-provided-for neighbours. It is admitted that the pens were actually taken so much smaller than they were originally designed, to give greater space for the display of agricultural implements, and, I am sorry to add with perfect truth, to the exhibition and sale of a variety of shop goods also, not at all connected with agricultural pursuits. The policy of so doing is open to the gravest doubts. None but those personally interested can surely deny it was the poultry, and that alone, that has always been the object of most interest to the visitors at the Birmingham meetings, from the very commencement even to this day. To "see the poultry" and to meet friends has always brought together a number of lady visitors unparalleled in most of such meetings; and if this department of the Show is to be crippled and rendered less interesting simply to "make room" for the sale of goods, the legitimate position of which unquestionably is the shop of the salesman, it is not an idle conjecture to state that the very keystone to the success in future years of the Birmingham Show is thus worse than jeopardised.

It seems strange to pooh-pooh the poultry at Birmingham and literally thus show the cold shoulder to the Society's best supporters, but so it is; and in the hope that the remonstrances of others who exhibit large-sized varieties of fowls may be heard through the expressed opinions of such parties, and thus, conjoined with my own, bring about simply a return to the first-sized allotments given to the more weighty fowls at our mother Show, has caused these aptly-timed remarks from a very repeatedly exhibited—OLD COCHIN.

[We can endorse what our correspondent says relative to the too-limited size of the pens for the larger varieties of poultry. They are not only injurious to the birds, but diminish the pleasure of inspecting them.—E.S.]

SPARROWS AND POULTRY FOOD.—I think if your correspondent, who complains of the sparrows eating the poultry food, were to adopt the plan so often recommended in THE JOURNAL OF HORTICULTURE—that is, feeding by hand, and only giving the fowls just as much as they will eagerly clear up, there would be none left for the birds. To leave any lying about is wasteful; nor is such feeding so good for the health of the fowls. I have never suffered from birds myself, and always feed them in hard frosts or snowy weather on account of the good they do in summer.—B. P. BRENT.

WEIGHT OF POULTRY.

In your remarks on the Crystal Palace Poultry Show in your last Number, you quote the weight of Mr. Fowler's Aylesbury Ducks, 22½ lbs.; and Sir St. G. Gore's Romans, 18½ lbs. per pen.

Will you please say whether these weights are for one drake and two Ducks? I presume I am correct in this; but still my impression was, that first-prize birds would weigh more than the above. What do you consider a first-rate weight for drakes and Ducks of both breeds?

I have bred a good number of Romans this year, and have this week weighed six drakes and twelve Ducks. The whole eighteen birds weighed 108 lbs.—an average of 6 lbs. for each bird. These were taken direct from our pond without any extra feeding of any kind; in fact, they are on the water night and day, and have only had the run of the farmyard with a large number of other poultry. What I wish to know is, whether you would consider such birds first-class as to weight, and what is the usual heaviest weight of both breeds at our principal exhibitions?

I may add, that last season I bred one lot of Aylesburys (nine in the brood), which weighed just 45 lbs. for the nine birds when fifty-eight days old. One drake weighed 5½ lbs., and another 5½ lbs.—RISBURNE.

[You are correct. Each pen at the Crystal Palace consisted of a drake and two Ducks. The weights are also correct. We call 6 lbs. a capital weight for a Roman drake, and 5½ lbs. for a Duck. Aylesburys should weigh 1 lb. more per head than Romans. We once had the Aylesburys at Birmingham 8½ lbs. each, and we once saw a Roman drake, belonging to Mr. H. Worrall, of Liverpool, weighing 10 lbs. The weight you mention is unusual at such an early age. Aylesburys weigh from fat, Romans from frame; and when we speak of capital weights, we do not speak of the first-prize birds of great competitors, but those that are good creditable inhabitants of a yard where their growth is not checked by want of food.]

SALE OF POULTRY AT EXHIBITIONS.

In your last Number you state with reference to the Crystal Palace Poultry Show, that average birds at a moderate price are sure to meet with a sale. I am afraid my experience goes quite the other way, and I am much more disposed to look upon keeping poultry for exhibition as a very expensive and unsatisfactory amusement. From what I have read in your columns from time to time, I should have been led to a different conclusion had not my own experience contradicted it; and I am inclined to think, that while poultry-exhibiting and breeding is a very profitable business for a few well-known names, and does very well for others who can afford to buy stock regardless of price, for the general run of smaller exhibitors it is not only unremunerative, but absolutely entails a loss. I shall be glad if any of your readers can prove that I am wrong, or teach me how to set about the business in a profitable way, for I certainly have not found it hitherto. I sent some birds to the late Crystal Palace Show, certainly of average merit, and moderate price compared with the general run of prices there. They were returned unsold. I have had birds at other shows that took prizes and commendations, and only on one occasion effected a sale. This is not encouraging, to say the least, as the cost of sending birds to a show cannot be estimated at much less than 9s. a-pen.

I am always at a loss how to dispose of my surplus stock. I have now several good cockerels which I am anxious to part with. I cannot find buyers in my own neighbourhood, and they are too good to kill. If I send them up to Mr. Stevens for sale the chances are that they would not realise enough to make it worth the expense. What am I to do? If I want birds myself, I must give a good price for them, but when I come to sell my own, it is quite a different thing. In fact, it is all outgoing and no incoming. I think it would not be a bad plan if you were to set apart a column of your paper, in which your subscribers could for a small fee insert their wants, whether in the way of buying, selling, or exchanging, without the formality of an advertisement.

Perhaps you may have had similar complaints before, but

I am sure that the facts which I have mentioned must deter many from exhibiting poultry at all, and induce others who have entered on the pursuit with enthusiasm to give it up in disgust.—AN EXHIBITOR IN A SMALL WAY.

[The amount of money given for pens will at once prove that there is a good sale for birds at shows. It is known beforehand that at Bingley Hall from £700 to £800 will be laid out in the purchase of birds that are sent for sale. Many prices are prohibitory, but before two o'clock on Monday hardly a pen of average merit in the useful classes is for sale, if the price be moderate yet remunerative. Fancy and feather birds are subject to other rules, and are not of certain sale. Are you sure that your birds are of average merit?]

COLLINGHAM POULTRY SHOW.

THE eighth exhibition of this Show was held on Oct. 27th. The number of entries was in advance of those of last year. Many classes of poultry were especially good. The *Game* and *Game Bantams* were of first-rate excellence. The single *Game Bantam* cock of Miss E. Crawford was one of the most perfect little fowls exhibited for a long time. *Silver-spangled Hamburgs* were also a very superior class. *Cochins*, though not numerous, were very good.

The *Pigeons*, as is always the case at this Show, were of extraordinary excellence. Mr. Taylor's *Blue Pouters* were remarkable for length of limb and feather. In *Short-faced Tumblers* Mr. Oates took three prizes with his well-known pens that have won at Birmingham and elsewhere. The *Owls* constituted one of the finest classes ever seen. The *petite African* variety was shown in all colours—White (of which there were three exquisite pairs), Black, Blue, and White (with black and blue tails). So good a collection was never before exhibited. The *Trumpeters* were very superior, Whites taking all the prizes. *Turbits* were good, but many exhibitors seemed to have bred them with Owl heads, losing altogether the proper distinctive frog-like character of the *Turbit's* skull. The *Variety* class was well represented, first prizes going to the Black-tailed *Owls* before mentioned, and an extra fifth prize being awarded owing to the goodness of the class.

SPANISH.—First, E. Brown, Sheffield. Second, T. T. Sney, South Collingham. Third, T. Whitaker, Melton Mowbray. Highly Commended, T. Rogers, Walsall; Birth and Bolter, Sheffield.

DORKING (Any colour).—First, R. Swift, Southwell. Second and Third, W. Dolby.

COCHIN-CHINA (Cinnamon and Buff).—First, — Staley, Collingham. Second, C. T. Bishop, Lenton, Nottingham. Highly Commended, C. T. Bishop.

COCHIN-CHINA (Any colour).—First, D. Causer, Erdington, Birmingham. Second, Mr. Staley.

GAME (Black-breasted and other Reds).—First, M. Billing, jun., Birmingham. Second, W. H. Swann, Farnfield. Third, R. Swift. Highly Commended, W. Boyes, Beverley. Commended, J. Doncaster, Hykeham, Lincoln; R. Swift.

GAME (Duckwings and other Greys and Blues).—First, J. Doncaster, Lincoln. Second, T. Carless, Notts. Third, J. Bradwell, Southwell.

GAME (White and Pile, or Any other variety).—First and Third, Miss E. Crawford, Farnfield. Second, C. Spencer, Thurlston.

HAMBURGERS (Golden-spangled).—First, Messrs. Birth and Bolter, Sheffield. Second, J. Dixon, Bradford. Highly Commended, W. Cannan, Bradford; H. Beldon, Bingley.

HAMBURGERS (Silver-spangled).—First, W. Cannan. Second, J. Dixon. Highly Commended, T. Rodgers; J. Key, Farnfield; H. Beldon, Bingley.

HAMBURGERS (Golden-pencilled).—First, W. Cannan. Second, Messrs. Wrigley and Fielding, Manchester. Highly Commended, W. Cannan; J. R. Jessop, Hull; J. Dixon.

HAMBURGERS (Silver-pencilled).—First, H. Beldon. Second, Messrs. Birth and Bolter. Highly Commended, W. Cannan; J. Dixon; W. Wood, Sheffield.

BANTAMS (Gold and Silver-laced).—First, T. H. D. Bayly, Biggleswade. Second, J. Staley (Gold). Highly Commended, R. Swift.

BANTAMS (Game).—First, Miss E. Crawford. Second, R. Hawksley, Southwell. Highly Commended, G. Maples; Miss E. Crawford; R. Hawksley; J. Newton, Chesterfield.

BANTAMS (Black, White, or Any other variety).—First, J. P. Gardner, Tugley. Second, Rev. S. R. Hole. Highly Commended, T. H. D. Bayly; J. C. Brierley (Japanese Bantams).

DUCKS (Aylesbury).—First, J. Smith, Grantham. Second, R. M. Stark. Commended, J. Smith.

DUCKS (Rouen).—First, Miss E. Crawford. Second, R. M. Stark. Highly Commended, H. Beldon.

DUCKS (Any other variety).—First, T. H. D. Bayly. Second, J. Dixon. Highly Commended, J. T. Fountain (Muscovy).

LARGER FOWLS.—First, Mrs. Cooper, Collingham. Second, W. Wright, Collingham. Third, Miss L. Maudslayi.

LARGE BANTAMS.—First, Miss E. Crawford. Second, T. H. D. Bayly. Highly Commended, R. Hawksley; E. Brown; C. Aukland, Chesterfield.

TESSERS.—First, E. Brown. Second, W. Boyes. Highly Commended, W. Massey; T. Yardley, Birmingham. Commended, T. W. Massey, Birmingham.

TESSERS.—First, E. Brown. Second, W. Boyes. Highly Commended, W. Massey; T. Yardley, Birmingham. Commended, T. W. Massey, Birmingham.

H. Simpson, Newark. *Almond Tumblers*.—First, H. Yardley. Second, H. Beldon. *Short-faced Mottles*.—First, W. H. C. Oates, Beethorpe. Second, G. H. Sanday, Nottingham. Highly Commended, G. H. Sanday; J. W. Edge, Birmingham. *Balds or Beards*.—First, W. H. C. Oates. Second, J. W. Edge. *Short-faced Tumblers*.—First, Mrs. Oates. Second, H. Beldon. *Barbs*.—First, H. Yardley. Second, G. H. Sanday. Commended, W. Massey. *Jacobins*.—First, T. Ellington. Second, E. Brown. *Owls*.—First, G. H. Sanday. Second, W. H. C. Oates. Highly Commended, H. Yardley; H. Beldon. Commended, W. H. C. Oates. *Trumpeters*.—First, Second, and Highly Commended, W. H. C. Oates. *Turbits*.—First, J. W. Edge. Second, J. R. Jessop. Commended, H. Yardley. *Pantails*.—First, G. H. Sanday. Second, J. Ellington. *Nuns*.—First, H. Yardley. Second, F. Elze. *Any other variety*.—First, G. H. Sanday (Black-tailed Owls). Second, H. Yardley (Priests). Third, J. Percival (Archangels). Fourth, J. W. Edge (Swallows). Fifth, H. Yardley (Satinettes).

SECRETARY'S PRIZE.—Turbit.—Prize, H. Yardley.

The Judges were Messrs. Tegetmeier and Challoner.

JUDGES SHOULD BE ALONE.

My attention has been called to a paragraph which appears in your October Journal, headed "Judges Should be Alone," which I cannot allow to pass unnoticed, as it reflects discredit on me as Judge of the Poultry Show held at Crewe on the 30th September last.

"A LOVER OF FAIR PLAY," as he signs himself, would have had a better claim to such a title, had he in the first place written to me on the subject of his remarks, instead of giving such false information to the public through the medium of your valuable Journal.

Had "A LOVER OF FAIR PLAY" spoken the truth, I should have let the matter have passed, but as to his statement—viz., that whilst the Judge was making the awards an exhibitor entered the tent, catalogue in hand, and went round the pens with the Judge, and that when the public were admitted, that exhibitor met the owner of a prize and a certain conversation took place. I can only say that that statement by "A LOVER OF FAIR PLAY," is untrue from beginning to end.

I trust to your kindness in inserting this in your next publication; and as I am not afraid, like "A LOVER OF FAIR PLAY," to give my name, I beg to subscribe myself—JOHN HEATH, Judge of the Poultry Show held at Crewe.

POLLEN AND HONEY OF THE IVY—THE ADJUSTING-HIVE—FOUL BROOD.

REGULARLY in the early part of October when the ivy blooms, I have observed that an unwonted activity prevails throughout my apiary, the bees confining themselves not solely to pollen-gathering, but conveying also a considerable quantity of honey to their hives; at least 3 or 4 ozs. having been daily indicated by a hive suspended from a steel balance, and which has also afforded a very interesting register of work during the present season. This honey possesses in a great degree the strong flavour of the leaf and berry of the ivy, its presence in the hive being exceedingly disagreeable, and communicating its peculiar smell to much of the previously stored unsealed honey. It possesses little more consistency than water, and will splash from unsealed combs, leaving an odour on the hands difficult to remove. The ivy largely abounds in the immediate vicinity of my apiary, and during the autumn of last year this honey was collected in unusual quantities, much more so than during the present season. Pollen also is gathered to a large amount from the same sources, the bees returning to their hives not only dusted with it, but with long, irregular, stringy filaments of the whitish pollen adhering to their legs, very little being kneaded into regular balls. Cannot the activity observed in the apiary of your correspondent, Mr. Fairbrother, and the return of his bees dusted with dirty white powder, be attributed to the vicinity of ivy now in bloom? the high-flavoured transparent fluid which he found in their honey-bags also being of a very similar nature to the honey of the ivy.

I have this season had a further opportunity of testing the "adjusting" principle of working hives, which I first carried out satisfactorily in 1851, upon which occasion I removed a box-super of upwards of 68 lbs. nett weight of pure honey, and in the present season the superb glass supers, the weight of which were lately communicated to the Journal by my relative, Mr. S. B. Fox, in his article on "Bee-keeping in Devon," these supers are being in all probability the

finest upon record. As an account of the "adjusting" hive has already appeared in *THE JOURNAL OF HORTICULTURE*, I need not again allude to the principle of its working, unless it should be desirable to bring it more prominently forward in a future communication. I believe it to be the best mode of obtaining large quantities of pure honey, but at the same time requiring that constant attention which none but the scientific apiarian would devote to it.

A very marked instance of "foul brood" has occurred in my apiary, the mischief existing unsuspected in the hive throughout the autumn and winter of last year, and it is only within the last two or three weeks that the true state of the case has been ascertained. The hive is a Ligurian stock possessing a dark but pure Ligurian queen, obtained from Mr. Woodbury last spring. She appeared to be a most fertile queen, having filled all eight combs throughout the box with brood in a very short space of time. From this period, however, a visible decrease rather than increase in the number of bees took place, the hive struggling on in a most unsatisfactory state up to the present time. No sooner had the "foul brood" controversy arisen, when, thanks to our friend Mr. Woodbury, the subject was brought so prominently forward, I saw the necessity of a thorough examination of the hive, and then discovered the nature and extent of the mischief, each comb being one mass of foul brood. The combs have been buried, the box burnt, and the few remaining bees now occupy a new and wholesome hive, and I anxiously await the issue, hoping they may recover lost ground and again prosper when another genial spring comes round.—Geo. Fox, *Kingsbridge*.

DRONES IN OCTOBER.

MAY I ask what inference I am to draw from the presence of drones in a hive now? I have kept bees for some years, and this is the first time such a thing has occurred. Out of four hives—viz., two old stocks and two new stocks—only the bees of the two new stocks, swarms of the middle of May, attempted to fill glass supers. I suppose the reason of this is that the two old stocks were exhausted of their numerical strength by a swarm and two casts from each.—*INQUIRER*.

[When drones survive so late in the season the probability is that the stock is queenless, and, therefore, its remaining inhabitants had better be united to another. Stocks that have been weakened by swarming very rarely work supers.]

BEE-KEEPING IN SOUTH LANCASHIRE.

As I read in your Journal each week the exultations of bee-keepers on the splendid season we have had, I am almost ashamed to write to you in another tone. It is well, however, that the capabilities of different districts and the experience of different apiarians should be compared, and, therefore, I am induced to write and tell of our misfortunes in South Lancashire. First of all, I should say that we have special difficulties to encounter. In the district, at least from which I write, we have on all sides of us manufacturing towns, and even a few smoky chimneys in our own village, all which are not favourable to the growth of flowers. But the great hindrance of all is the dreadfully rainy climate.

I began the year with two stocks, one of English bees in one of Neighbour's improved cottage-hives, and the other of Ligurians in a wooden bar-hive. The former stock swarmed on the 26th of May quite unexpectedly. Unfortunately I was away, and no one knew how to manage them, and the swarm was lost. I was able to collect a few of the bees from the centre of a thick hedge when I returned late at night, but the queen was not with them, and they returned to the old hive. Of the rest I am afraid most were killed by being shaken on the cold and damp ground. My second swarm was hived easily, and apparently very nicely, but this returned next morning to the old stock. The Ligurian stock did not swarm at all.

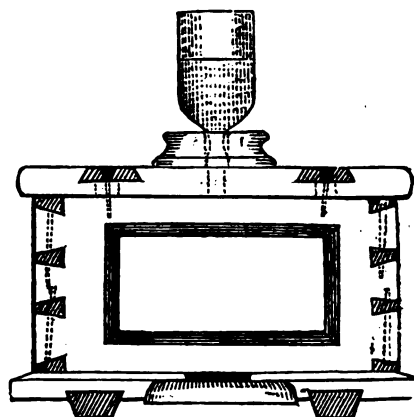
Thus I was left with my two old stocks, both seemingly in good condition. The summer was on the whole favourable. We had a good deal of rain in June, but there was a very warm fortnight in July in which they did so well

that I thought I might venture to take some honey from the Ligurian-hive before sending it to the moors. I took only about 5 lbs. of comb, leaving the weight (exclusive of the hive) about 13 lbs. This would have been quite enough if we had had even one fine fortnight in the autumn, as there was a great deal of blossom on the heather. Unfortunately there was hardly one fine day. On bringing the hives back about a fortnight ago, I found each had lost about 3 lbs. For each of them, therefore, it was a case of feeding-up for the winter, but especially for the Ligurian-hive.

The English bees have taken their food very quickly and greedily, and are now quite safe; but the Ligurians decline the sugar and water I offer them, or only take it very slowly. Can you tell me what I am to do? I wish to keep the stock if I can, as I think I could not get another Ligurian-hive in this neighbourhood. I have been feeding them at the top with one of Neighbour's feeders. The opening in the hive is not wide enough for the neck of a bottle, or I would have tried bottle-feeding. I am now having something made in zinc with a neck narrow enough to insert, but as the frosts have begun I am afraid I am too late. Is there any way by which I may keep them alive till next spring? If you, or the great bee-master of Devonshire, or any other of your correspondents can advise me, you will much oblige.—*A SOUTH LANCASHIRE BEE-KEEPER*.

P.S.—I may add that all my neighbours here seem to have been little more fortunate than myself, and, instead of taking any honey, have been obliged to feed-up their stocks liberally for the winter.

[Try the bottle for your Ligurians applied in this fashion, through a block of wood with a bit of perforated zinc



interposed. The neck of the bottle need not enter the hole in the top of the hive.

SOURCES OF POLLEN.

I ACKNOWLEDGE with thanks the kind and lucid reply of "A DEVONSHIRE BEE-KEEPER," to my suppositions and remarks in page 323. I am forced to believe where I cannot understand; but as I willingly do this, and press it upon others to act likewise in spiritual matters, I can the easier submit to do so myself with a good grace in earthly ones. The particulars mentioned from Maraldi, Debrau, and Co., were unknown to me. I think I once read some remarks of Huber, which led me to suggest the supposition I advanced. I do not regret my last letter, neither will any of your readers, since it has drawn forth so interesting, so instructive a reply as follows it; and still less reason for regret shall I have if my house and apiary are honoured in consequence with a visit from the head of our clan.

Bees have been working much lately on the ivy. The colour of the pollen is yellow. Some weeks ago mine appeared like dusty millers, and they were then working on some flowers in my garden, called, as I have been told, malope—I suspect of the mallow tribe.

I have for many years been puzzled to know whence a pollen is collected of the colour of the young larch cones when they first appear, and about the same time; yet I never

saw bees work on larch cones. It is not the rule either, that the colour of the flower is the colour of the pollen.

I never had my attention called to the fact that bees will not remove chilled brood till in the last Number. They certainly will remove dead bees in the pupa state, and lug them out fast enough too. They will destroy large pieces of comb if it does not suit them. I once saw a piece destroyed from the middle of the hive as large as the palm of my hand in a single afternoon, and the place was in due time filled up with new comb. I dare say more was renewed, but I can only speak to what I saw.—A HAMPSHIRE BEE-KEEPER.

AN EXPERIMENTAL APIARY.

MR. LOWE's lengthy exposition of his views with regard to "an experimental apiary," which, he maintains, "can never be a thoroughly prosperous one," might very well have been spared. It is to be presumed that he means a purely experimental one, by which I understand an apiary established for the sole purpose of experiment. If so, what then? Who ever doubted, or could doubt, that the sort of experimental apiarian whom he attempts facetiously to describe, and hold up to scorn, would fail—fail, that is, to obtain honey, which, according to Mr. Lowe, is the sole end and object of bee-keeping?

No doubt, however, even the peculiar bee-keeper whom Mr. Lowe has in his eye, would defend his management by pure experiment, and maintain that his object was quite as legitimate and interesting as Mr. Lowe's, and possibly as useful to others in the long run. But, after all, where is the man in our small bee world who answers to Mr. Lowe's description? He has raised up a man of straw to provide himself with the exquisite pleasure of knocking him down. Let him enjoy his postprandial recreation. I for one have no sort of inclination to grudge him the felicity of his crow. If, however, Mr. Lowe is not speaking of a purely experimental apiary, then he has simply condescended to misrepresent and misunderstand from motives best known to himself the experiments prosecuted, and the objects aimed at in those experiments, by your esteemed correspondent, Mr. Woodbury. As to his "motives," Mr. Lowe himself lifts up the veil, and permits us to see them. The occasion of his sarcasm, the secret of his bitterness, hitherto unaccountable, is now revealed in one short sentence of his recent communication. "My tone and style," he says, "are already thought by some to be too severe; and it appears, though I must receive contradiction, I must not be given to philippic." This gentleman has "received contradiction," so at least he imagines, in regard to some matter of apianian research. Unable to brook opposition, even at the hands of so kindly an opponent as Mr. Woodbury, forthwith he dips his pen in gall, and we have the result in the "philippic" of caustic sarcasm and misrepresentation which appeared recently in your columns. Really this is too bad, and it is time that a strong protest should be advanced against a style and spirit so adverse to all friendly criticism. "*Ridentem dicere verum, quid vetat?*" But this sort of writing can only prevail at the cost of all profitable and harmonious co-operation for the advancement of our favourite pursuit. Till Mr. Lowe took up the cudgels, or rather (to use his own metaphor), commenced traversing the bee field with hob-nailed boots, regardless of his neighbour's corns, we were at peace. Let us hope that we shall now be suffered to return to peace.

In the meanwhile let me suggest to him to reflect upon the possibility that "others see as well as you." A notable instance will be found in this very question of foul brood. Very positively he asserts that "decayed and abortive brood in all stages" is "removed by the bees." As positively I assert that "decayed and abortive brood" is "removed by bees." But of course, thoroughly in weak hives, which, consequently, fully agree with him, "they must be removed by the bee-keeper's hand." But in strong hives the bees fully up the requirements of the bees and remove the brood.

Mr. Lowe was not fairly put to the test. He was not put to the test of a strong hive, and he was not put to the test of a strong hive.

one of the most delightful of rural sights and sounds, even should the said swarm speed away, *agmine facto*, beyond the ken of the distressed owner. Even so to the artist's eye, the dilapidated cottage, discoloured with dirt and tenanted by a ragged peasantry, is more charming than the trim and cleanly dwelling of the thrifty artisan. But how many a disappointed bee-keeper would gladly, and does gladly, learn the art by which he may secure his swarms? and warmly will he thank the much-abused experimentalist who puts him in the way of scientifically managing his bees, especially at the swarming time.—B. & W.

OUR LETTER BOX.

DORKING COCK UNABLE TO STAND (S. D.).—All the symptoms and his slow recovery intimate that a small blood-vessel is ruptured in the head. The hot sunshine and the inflammatory action incident to moulting were the probable causes.

WHITE FEATHERS IN WING OF A BUFF COCHIN (J. Carr).—The white feathers would constitute what is called a mealy wing. It is not a disqualification, nor is it a serious disadvantage. Nevertheless, if competition were very close a clear buff wing would be preferred to a mealy one.

COCHIN-CHINAS LOSING THE USE OF THEIR LEGS (C. C.).—The disease you mention is probably cramp, and is caused by the damp floor. If you have gravel in your neighbourhood cover the flooring of the house some inches deep with it. When the cramp is coming on give the fowls bread steeped in strong ale directly.

KEEPING BANTAMS AND SPANISH FOWLS TOGETHER (R. R.).—It is a disputed point. Our opinion is that they may be kept with impunity.

ROUFFY POULTRY (S. R.).—You need not clear off all your poultry. If you did so, and intended to rest the place, it should be empty for months. Clear off the sickly birds such as are hopelessly ill. Limeshine all their roosting-places. Feed them well on bread and ale. Put some cumin in their water, and let all their roosting-places be covered with dry gravel some inches deep. We believe this will cure them. If you were determined to do away with them for a time you need not send away the Geese and Ducks: they are not subject to such disorders. We think if you had roused about, the Turkeys would be sure to catch it—they have a weakness for it. If your Geese, Ducks, Turkeys, and fowls roost together you will not have them healthy. Fowls should roost by themselves. Turkeys the same. Ducks and Geese may consort, but fowls must be separate.

COLOURED PLATES OF POULTRY (Country Poultry-Fancier).—The best are in "The Poultry Book" by Mr. G. W. Johnson and the Rev. W. W. Wingfield. It was published a few years ago.

WEIGHT OF PIGEONS (H. F. L. K.).—From 4 lbs. to 4½ lbs. is considered a good weight for a pair of Bunts. I am not aware that there is any standard weights for the other breeds. Carriers and Pouters are liked large; Tumblers, Turbits, Owls, Jacobins, and Carmelites are preferred as small as can be obtained. If wanted for the table, a cross between Dragoon and Pouter or Dragoon and Trumpeter will be found useful. But I expect most profit is made by breeding first-class birds of any of the principal varieties.

—B. P. BRENT.
STOCKING A PIGEON LOFT (S. Vincent).—The furnishing of a loft for the accommodation of Pigeons may be effected in the following manner:—First see that the floor is sound and the door, skirting, &c., secure against rats. A window or opening should be made on the south or south-western side to admit air and light, and an area or trap made of lathwork or wire netting should be placed outside so that the Pigeons may go therein to sun themselves, and where they can also be provided with a bath. The internal fittings may vary according to the taste of the fancier or the shape of the loft. Separate pens provided with nests, and each being made to close, may be erected round the walls, of which Mr. Eaton has published a diagram, or, if the slanting roof comes down to the floor, the pens may stand back to back in a central row. Others place shelves against the walls 18 inches apart one above the other, and divide them by partitions at every yard, nailing boarding down the front so as to make a recess at each end of the three-foot divisions for the nests, or to receive the nest-pans, if such are used; or it may be supplied with boxes or any other form of nest, only bearing in mind that each pair of Pigeons require a pair of nests, and that each couple of nests must be separated or divided from the others, so as to form a private residence for the pair of Pigeons inhabiting them. Water is best supplied in a large earthen fountain. Food may be given in a hopper, or, if preferred, by hand; but in this case they require constant and regular feeding. Small beans, old tares, and lentils are perhaps the best food for Pigeons. S. Vincent will find more details in the "Pigeon-Book for the Many."—B. P. B.

PARROT PICKING OUT ITS FEATHERS (E. E.).—Let it have daily a bath of tepid water. This is best afforded in a soup plate. If the bird does not voluntarily bathe pour tepid water over it daily through the rose of a watering-pot, giving not a sprinkling but a good soaking.

LEAD PIPES (A Subscriber).—You can obtain sulphide of potassium of any practical chemist, but we do not know the cost. It cannot be dear, and a small quantity would suffice for a great length of pipe. We should use a hot solution nearly saturated.

LONDON MARKETS.—NOVEMBER 2.

POULTRY.

The supply is, if anything, rather less, and the influence of trade prevents any rise in prices.

	s.	d.		s.	d.
Large Fowls	2	6	Chickens	1	9
Smaller do.	2	0	Grouse	1	9
Chickens	1	6	Hares	1	9
Geese	6	0	Rabbits	1	3
Ducks	2	0	Wild do.	1	8
Pigeons	2	0	Pigeons	1	0

WEEKLY CALENDAR.

Day of Month Week.	Day of Month Week.	NOVEMBER 10-16, 1893.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
10	Tu	Lombardy Poplar leafless.	59.6	35.4	43.0	21	11 af 7	17 af 4	7 6	37 3	29	15 57	314
11	W	Martinmas Day.	51.0	35.5	43.2	15	13 7	16 4	22 7	14 4	●	15 50	315
12	Th	Beech leafless.	50.5	34.5	42.5	16	14 7	14 4	33 8	1 5	1	15 43	316
13	F	Teal arrives.	49.8	35.8	42.8	20	16 7	13 4	37 9	1 6	2	15 35	317
14	S	Widgeon arrives.	48.0	34.0	41.0	19	18 7	11 4	34 10	9 7	3	15 26	318
15	Sun	24 SUNDAY AFTER TRINITY.	48.5	34.3	41.4	16	20 7	10 4	19 11	24 8	4	15 16	319
16	M	Mentzel died, 1791. Bot.	48.4	32.7	40.6	13	21 7	8 4	55 11	41 9	5	15 6	320

From observations taken near London during the last thirty-six years, the average day temperature of the week is 49.5°, and its night temperature 34.6°. The greatest heat was 63°, on the 12th, 1841; and the lowest cold, 18°, on the 15th, 1848. The greatest fall of rain was 1.24 inch.

LIFTING THE ROOTS OF VINES, AND REMAKING THE BORDER.



LIFTING the roots of Vines and re-making the border is an operation in which several correspondents are interested at the present time, and as they appear to be entire strangers to the details which are necessary to insure success it has been resolved to devote a paper to the subject, more particularly because I feel certain that there are plenty who will agree with me when I say that there are hundreds of Vines in the country in an unsatisfactory and unfruitful condition from no other cause than that their roots are deep down in an adhesive, wet, and consequently cold and ungenial soil. It would be easy to enumerate a dozen cases within my own knowledge, and partly in my own practice, where the most marked benefit has resulted from lifting the roots of Vines,

and replanting them in better-constructed borders. True there are other ways in which the roots of Vines can be brought to the surface of the border, but if the soil is adhesive and not well drained, there is no other way that I am aware of by which the evil can be so efficiently remedied.

The first question which very naturally arises in the minds of our correspondents is as to the best season to lift Vines with the greatest possible chances of a crop of Grapes the following summer. To this I have no hesitation in replying that, waiving all contingent circumstances, the best time is early autumn, before the leaves and roots have ceased their active functions, and while there is still a high degree of natural warmth in the soil. The simple fact—would that it were thoroughly explained to every child—that the action of roots and leaves are reciprocal, and depend one upon the other, is sufficient reason, apart from experience, for concluding that autumn is the best time. So far as the operation of lifting is concerned, the great matters on which a crop the following season depends are, that there should be root-action to repair as much as possible, before the resting season, that shock unavoidably consequent on the breakage of roots in disentangling them from an adhesive soil; and that there should be time to regain, by a good hold of fresh soil, a position similar in kind, if not in extent, to that enjoyed by a Vine established in suitable soil. By delaying the operation till winter all chance of accomplishing this important object is lost. The roots must then lie a long time with all their wounds exposed to a cold soil,

and without having that natural hold of it peculiar to roots which have been active in it in autumn. Another disadvantage arising from winter-lifting is that in spring the growing Vine has exhausted its stored-up sap, and the mutilated roots do not come bounding into action, to carry on unchecked the progress of the Vine, with that energy and readiness as when the fresh rootlets have established themselves in autumn before the leaves of the Vine have ceased to act. True, this weak point may be assisted by placing warm beds of leaves on the border a little before the Vines start into growth, and by this means young roots may be formed much sooner than otherwise; but, in the case of Vines at least, this is not the order of nature, although it may be the best thing to do under such circumstances.

There can be no difficulty in deciding on autumn-lifting with the leaves on the Vines and the soil warm, in preference to delaying it till winter; but there are several considerations which, when autumn-lifting is not convenient or practicable, make me prefer deferring it till the spring just as the buds are swelling. Apart from the fact that there are less chances of suitable weather in winter than in spring for performing such work in a proper way, there are objections already named to the broken rootlets of Vines being allowed to lie all winter in a cold border from which those which ought to be of most service in spring are sure to suffer more or less. It would certainly be very questionable gardening to shake out and repot a Fuchsia at the dead of winter or immediately after it had shed its last leaf, and then to stand it in a cold shed or under the greenhouse-stage till spring. It would certainly be better to repot in autumn and subject it to such treatment as would insure fresh root-action before it shed its leaves, or to leave it till spring when it was just bursting into growth; and I know of nothing peculiar to the Vine which warrants the application of any other principle.

There are several causes which in some cases make it undesirable to disturb the roots of Vines in early autumn—such, for instance, as that of our correspondent, to whom a reply was given last month, who had his crop still on the Vines, and wished to let it hang through the winter. To lift the roots of such Vines would have been detrimental to the fruit, and, besides, with Grapes on Vines, such management as is most likely to insure success could not be carried out. It may also be inconvenient on account of other matters, such as lack of time and the necessary material. In such instances experience warrants me in advising the delay of the operation till spring, just as the Vines begin to swell their buds, and in the meantime to get ready the soil, and, if possible, to protect it from wet till it be required.

The precaution of protecting the old border from wet by wooden shutters, which has been taken by our correspondent "C. V.," is strongly to be recommended, in order as much as possible to preserve the roots made last season. It would be well at the same time to open a drain all round the front and end of the border sufficiently deep to prevent water from standing about the

roots; for success depends in no small degree on the careful preservation of as many of the young roots as possible, and in deep damp borders they are, alas! scarce enough.

I have ripened a crop of Grapes in the end of June where the Vines had been entirely lifted the previous autumn, and I have removed Vines after they had shed all their leaves from one vinery to another in which forcing had just commenced, and cut a fair crop from them as early as May. And plenty of gardeners there are who have done the same, and who would also recommend the lifting of Vines to be done either early in autumn or to leave them till forcing or growth was about to commence. On the other hand, some have ruthlessly sawn the roots entirely, or nearly so, from their Vines, and matured a crop from them the same year; others have lifted them in June with Grapes ready to thin on them, and yet brought the crop to maturity. But except in special cases such high-skilled and daring strokes are not to be recommended. In fact, where the Vine roots have the run of borders, both inside and outside the vineries, the safest practice is to lift the inside roots one year, and those outside another. When this can be done there need be no fear, all other things being favourable, of obtaining Grapes in the following season. When speaking thus of a crop in the following season it must be borne in mind by the inexperienced that the foundation for a crop lies in the proper maturation or ripening of the wood in the previous year; and this is just what is so frequently wanting in Vines that require lifting, and what should be aimed at as much as possible the autumn in which they are to be lifted.

It has been remarked that there is another way of bringing or enticing Vine roots to the surface besides that of lifting the roots and entirely removing the border; and which is more commendable under certain circumstances than partially or entirely lifting the roots—in the case, for instance, of borders which lie comparatively dry on a subsoil of gravel or sand, to which no great objections can be urged, and when the roots have got down and established themselves in the bottom part of the border, leaving a mass of inert soil on the surface without a single root. This is a very common occurrence, and in the successful cultivation of the Vine it is considered of great moment that this state should be just reversed, and that a mass of active roots should be brought to the surface and encouraged to establish themselves there. Those who have only one vinery, with all the roots in an outside border, and who, consequently, cannot lift one half the roots one year and the other half the next, and who at the same time do not care to incur the least risk of losing a year's crop by carrying out the radical means recommended for Vines that have their roots in thoroughly wet soil, can do much towards accomplishing the end in view by removing all the soil from the surface of the border down to the roots. Then dig out a drain 18 inches wide and sufficiently deep to be below the principal roots and made-border, and fill it up with what is called a "rumbling drain" of brickbats or stones. If a tile drain be placed at the bottom all the better—not, however, on the top of the stones, as one of our tenants here told me he found, to his great amusement, an Essex notable doing in what he called imitation of the Scotch system of draining. Then cover the roots with a six-inch dressing of well-pulverised lime debris, thoroughly-rotted manure, and turfy loam in equal proportions, and well mixed together in a dry state. Just as the Vines are to be started, a bed of leaves, sufficient to generate heat enough to warm at least the six inches of top-dressing, should be placed on the border, and over all something, such as a thatching of wheat straw, to throw off rains; the whole to remain till midsummer. The stone drain in front cuts off all surrounding wet, and in itself that is no small benefit to a Vine-border where the roots are deep and wet. When the border is uncovered it will soon be discovered that the open rich soil on the top, with its temperature raised above the lower strata of the border, is sufficient to entice upwards a lot of roots of a very different order to those found at the bottom of borders. By midsummer I have sometimes found roots growing through the top-dressing into the leaves above, and at season let the same process of adding a new dressing and the bed of leaves be repeated. In two or three years it will be found that the roots have been brought to the surface, and the Vine is in a state of health and vigour.

active well-ripened roots, and that the Vines will be correspondingly improved.

Not having time at present to detail the process of lifting the roots and forming new borders, &c., I will conclude by advising our correspondents to delay the process now till spring, and in the meantime to keep their borders as dry as possible, and next week I will return to the subject.

D. THOMSON.

THE PAMPAS GRASS—TURKEY MILL GARDENS.

SINCE the remarkable winter of 1860-61, which killed so many fine plants of the Pampas Grass in various parts of the country, we have not heard so much of it as before; and though now and then reports are made of some favoured plant flowering with an extraordinary number of spikes, the cultivation of the plant in stations suited to its flowering has been much circumscribed. In fact, so much so, that it is a question at the present time if there be as many plants in cultivation as there were three years ago, the more especially since its flowering in cold and late situations is a hopeless affair, excepting in very dry and hot seasons, which only occur once or twice in a dozen years or so. However, when a fine plant does flower, it is a noble object. No other herbaceous plant that I am acquainted with can equal it, and flowering, too, at a time when the gaiety of summer-flowering plants is on the wane, it is highly acceptable.

The present season has not passed over without affording a due proportion of blooms on this highly graceful plant. I noticed some very good blooms on plants in a nursery at Bagshot, about the middle of October, the soil being of that black peaty kind so favourable to the growth of the Rhododendron, and such-like shrubs. Amongst a number of plants all flowering at the time, three or four forms of growth or characters of flower might be made out amongst them, and all beautiful. Some of the plants evidently had a great many spikes of bloom on them, and the foliage exhibited a more than usual tint of bright green. Some other places I have seen this autumn also possess fine examples of this highly ornamental Grass; but by far the noblest plant of the kind I have seen in bloom is in the garden of the Messrs. Hollingworth, of Turkey Mill, near Maidstone, where a plant had 130 spikes of bloom on it, being, in fact, literally covered with it. The numerous stems supporting the fine feather-looking plumes rose in regular order, so as to form a most symmetrical head, which the most expert plant-dresser for a flower show could not have improved, even in his own idea of forming a sort of balloon-shaped plant. The dense forest of flower-spikes rising so regularly on all sides, as well as in the centre of the plant, left nothing to be wished for on the score of symmetry, and certainly still less on that of profuseness, for the whole of the upper surface was covered with graceful feathery plumes. The situation of this fine plant was on the sloping banks of a piece of ornamental water, and about a dozen yards or so from it; but I do not think the spot was at all a moist one, but the plant might benefit by the vapour from the water. Some other plants growing closer to the edge, and with their drooping foliage lapping in the water, were equally healthy, although none of them possessed so attractive a head of bloom as the specimen previously described; but they seemed younger plants, and in due time I have no doubt but that they will be equally profuse in blooming.

Besides the plants of Pampas Grass just described, the grounds contained some excellent specimens of Conifers. A *Wellingtonia gigantea*, some 14 or 15 feet high, was a perfect model. Some specimens of *Thujaopsis dolabrata*, *gigantea*, and *Lobbi*, were also good and promising, and that really distinct but somehow neglected *Cupressus*, *C. Uhdeana*, with its silvery foliage, promised to become a fine specimen. This *Cupressus* is not so much planted as it ought to be, considering how widely it differs from the kinds often met with. *C. Lambertiana*, and *C. macrocarpa* were, I believe, also both well represented at this place, as well as some other favourite shrubs and trees. But the principal feature of the place to the frequenter of flower shows was the extensive collection of Roses, numbering upwards of five hundred varieties, as told, which were here grown in excellent condition. The fact of Mr. Hollingworth and his gardener,

Mr. Holder, winning so many prizes at the metropolitan and other shows in the past and previous seasons has testified. The situations in which the Roses were planted were varied considerably, the nature of the ground affording facilities for this being carried out.

The garden or dressed ground may be roughly described as an irregular plot surrounding a piece of ornamental water of some two acres or more in extent, the bank in some places gently shelving to the water's edge, in others rising abruptly in masses of natural rock (Kentish rag); and it presented many natural features of interest, which had been duly taken advantage of, as affording sites for climbers, Ferns, shrubs, and trees of various kinds; and ever and anon Roses were found in all available places. It is not, however, my purpose here to describe the management of these, as the fact of so many prizes finding their way into the hands of the spirited owner shows that they are well grown. No doubt, the good natural soil of the place is conducive to success, and the proximity of water may, perhaps, be advantageous also, for certainly the latter has much to do with a good stand of Dahlias during a dry period in summer, and these flowers are also grown here to great perfection. The whole place presents many features of interest, reflecting great credit on the spirited occupiers and their intelligent gardener.

I cannot close this notice of the Pampas Grass without mentioning a singular fact connected with a plant we have at Linton Park. This specimen was planted out, I believe, in 1855, and flowered pretty well in 1857, and I am not certain if it did not do so in 1856. It also flowered well in 1858 and 1859. I have forgotten whether there were any blossoms on it in 1860 or not, but there were a few in 1861, which was a rather barren year in flowers of this kind, so many plants being irrecoverably injured; but the autumn of 1861 being favourable and the plant healthy, I made sure of an extraordinary bloom in the following season, when to my surprise there was none, and none this year either. I confess being at a loss how to account for this, for the plant has every appearance of health and vigour and has grown to a large size. The site is a rather moist one for this place, and the plant remaining unmoved for so many years would certainly favour the production of flowering-spikes rather than otherwise, but such is not the case. From its not having flowered last year I expected a greater profusion of bloom this season, but this not being the case, I am at a loss to account for the circumstance.

We have other and younger plants flowering very well, one not many yards from that here alluded to, but on drier ground; but generally the best flowering plants I have seen have been growing in rather damp places, or at all events near to water. An open space is, I believe, better suited to them than a place surrounded by shrubs, and certainly they look best when seen on all sides, the graceful drooping blades contrast so well with all around them, and differ so widely from all other or ordinary forms of vegetable life. The plant is much admired even when not in flower, but when it is surmounted with its feathery plumes, presenting various tints of white, drab, grey, and purple, the picture is complete. Sometimes the character of the adjoining scenery adds to the effect. A plant we have here with a tolerably good head of bloom on it, has for its background a mass of foliage of the Sumach, the handsome pinnated leaves of which, flanked as they are by ordinary evergreens, afford a very interesting variety.

Certainly the Pampas Grass as an ornament to lawns ought to be more extensively grown than it often is, and, perhaps, a still better site may be found for it in some of the open spaces beyond the bounds of the close-shaved turf, where the dressed ground gradually merges into the natural. In such a place, and in a suitable situation, the Pampas Grass is not one of those miffy tender things requiring to be looked at every week; but after it has had a fair start it is capable of taking care of itself, and though it would not be fair to allow it to suffer from shrub or tree, I do not think it would fail to contend successfully against all ordinary herbage, however wild and rank.

J. ROSSON.

ANDROSACE LANUGINOSA OF WALLICH.—It is odd to see such prominence given to this by a contemporary as a new

and rare plant, when it is to be found in every botanic garden and in the London nurseries. It is a very pretty plant, and does very well planted out in summer.—*PRIMULA*.

INSURANCE OF GLASS FROM HAILSTORMS.

As it is not, perhaps, generally or sufficiently known that glass can be insured from the damage done by hailstorms, I am tempted to tell your readers how it may be effected, premising that I have no shares in any insurance office. The only office that offers to insure glass houses is the Royal Farmers' Insurance Company, Strand, London, and they require the following rules to be adhered to:—

Each house to be numbered, and the kind of glass used in building it to be described in the proposal as follows:—

- On house No. 1—1000 square feet of British sheet glass at 3d. per foot.
- On house No. 2—1500 ditto ditto at 4d. per foot.
- On house No. 3—1200 ditto ditto at 5d. per foot, and so on.

The glass should be valued according to its quality, but allowing at least a halfpenny per foot over its value to cover the charge of reglazing: thus glass costing 2½d. per foot should be insured at 3d. per foot. Mr. Rivers, of Sawbridge-worth insures the greater portion of his glass, 33,000 feet, at 3d. per foot, including 21 ozs., 16 ozs., and crown glass, for which he pays an annual premium of £4 4s. 9d., not quite 3s. per 1000 feet. This seems not too high a price for a little peace of mind during every summer, when a black cloud and a clap of thunder makes the owner of glass houses quake for fear of hailstones.—*CONSTANT READER*.

HOW TO CULTIVATE VINES IN POTS.

This branch of horticulture has been frequently written upon, and these notes are not jotted down with the view of imparting instruction to my older brethren, but to afford encouragement to those who with limited means wish to be successful in this most interesting mode of fruit-culture.

It is now a little more than three years since my present employer put up several vineries and an orchard-house (the orchard-house and its tenants must form the subject of future notes), and when the houses were finished, and the hot-water apparatus completed, he very naturally wished to obtain an early produce from his outlay. He therefore purchased a number of pot Vines, of varieties recommended by nurserymen as having special qualities for pot-culture, to supply fruit until those planted in the borders attained a fruiting condition.

What their treatment was the first year I do not know, as I only took charge of the Vines two years ago. This I know, that these bought Vines produced no fruit the first year, and when I first saw them they were in a most deplorable condition, with the wood unripe, and the buds imperfectly formed. They had, during the month of October, received a surface-dressing of good turfy soil, mixed with a tolerable amount of rotten dung and bone dust. I pruned them in due course, and about the middle of January they were started into growth. As soon as the buds began to break they were supplied with weak liquid manure two or three times per week, and as the shoots developed themselves the liquid manure was increased in strength, and applied more frequently. Most of the bought Vines yielded tolerable crops—more than could be well expected, considering the state of the wood, for they produced from four to seven bunches each.

Now, in addition to these bought Vines, were a large number which had been raised from eyes the previous spring, the eyes taken, without being named, no doubt, from the Vines permanently planted in the borders, and cut down in the usual way. Most of these Vines had been grown in rather small pots, and, as a matter of course, their growth was small in proportion. These, with the exception of one or two of the strongest, were cut down to two eyes, and along with the others were started into growth. They broke well, the best shoots only being encouraged, and during their early growth were assisted by frequent applications of manure water. Some of the strongest were shifted into their fruiting-pots in the early part of the summer, and the others remained until autumn. They each soon reached the top of the respective houses in which they were growing,

and made canes something resembling a gentleman's slender walking-stick.

During the autumn the remaining Vines were moved into pots of about 12 inches in diameter, and 12 inches deep. This size I consider quite adequate for all ordinary purposes, and Vines grown in 12-inch pots with ordinary care may be expected to produce from 5 lbs. to 8 lbs. of fruit each. The compost in which they were potted consisted of two-thirds good hazel loam chopped up and left in lumps about the size of an egg, with some rotten dung and pounded bones to form the other part. The pots were well drained with broken crocks, and over the crocks was placed a layer of boiled bones about the size of a walnut. The soil was well thumped into the pots, and a sufficient space left to hold water. They were pruned to 6 or 7 feet in length, according to their strength, and being placed in the position they had to occupy, about Christmas the early house was again started.

I prefer bending down the Vines to a horizontal or recumbent position until they begin growing; this causes an equal circulation of sap, and makes the buds break more regularly. By this means I succeeded in breaking every eye in the pot Vines, with the exception of one or two nearest the pot, and almost every branch showed fruit—some shoots two, three, four, and even five bunches each. The usual routine of disbudding, stopping the laterals as they advanced, thinning the bunches, also the thinning of the berries, and the syringing, were duly attended to.

One very important point requiring special attention is the watering. This must be varied to insure success. Plants, like human beings, prefer a change of diet. I obtain my supplies of liquid manure from a well which receives the drainage from adjacent stables. This, when weak through heavy falls of rain, I strengthen with guano at the rate of about two ounces to the gallon. I also employ the soap-suds from the laundry, mixed with cowdung and guano as a change.

Those Vines started in the earliest house ripened a few bunches in the early part of May, while those started in the orchard-house, and brought into the late vinery as accommodation could be found them, are still in fruit, and may be up to Christmas. Thus with pot Vines alone, independent of what has been taken from the rafters, we may have a supply from May till December.

Now, let us look at the produce of these pot Vines. Lady Downes' appears to be a shy bearer in a pot; at least with us, the produce was but small, and it was the only one that could be considered a failure. It was not forced much, being only started in a late house towards the end of February. Trentham Black appears to be not very free in a pot, but the fruit was large and exquisite. Perhaps some of your readers may have succeeded better with it in a pot. Muscat St. Laurent and Chasselas Rose Royale I consider useless; the latter produced eight or nine bunches to a pot, but the berries were small, and the flavour indifferent. Chasselas Musqué may be considered good for pot-culture, and also for forcing, as it is a free bearer and an early variety. Black Frontignans produced from nine to eleven bunches on a Vine; White Frontignans, from ten to seventeen bunches; and Grizzly Frontignans carried seventeen bunches; and one Grizzly showed upwards of thirty bunches on a rod about 6 feet long. Many of the bunches were as good as may be ordinarily seen on rafters. Black Hamburghs produced three, four, and up to fourteen bunches. One Black Hamburgh I only allowed to carry four bunches, and weighed the produce. The first bunch weighed 2½ lbs., the second and third were 1½ lb. each, and the fourth 1 lb. Thus one Vine with only four bunches produced 6½ lbs. of fruit fit for any table. I should like to know what variety of Hamburgh the latter is. The bunch is large and heavily shouldered, and tapering at the point; the skin deep black purple; berries roundish, and of good flavour; and the foliage when changing colour assumes a beautiful pink tinge very different from any other variety I know. [Probably Black Champion.—Eds. J. or H.]

I am certain any one possessing only a small pit, with artificial heat at command, may succeed in growing fine grapes from pot Vines. The minutiae of propagation and the after-management of pot Vines have been so frequently detailed by Mr. Fish that I might refrain from saying anything more on the subject, but as so many almost in the height

of a Grape-growing mania, and having given the cultivation of Vines in pots special attention, I may be excused in saying a little for the benefit of beginners.

The plants are, without doubt, the best raised from single eyes obtained from strong, healthy Vines, and should be procured as early after Christmas as possible. There are many different ways of making the cuttings; perhaps as simple as any is to make them about 1½ inch in length, and to place them horizontally with the bud uppermost in small 60-sized pots, filled with light, rich soil, and well drained. These pots should, if possible, be placed in a bottom heat of from 70° to 75°. As soon as the small pots are filled with roots they must be transplanted into larger pots—say large 48's. The compost used for this shift, and for every successive potting, should consist of two parts turfy loam, and one part very rotten dung; to this add, if the loam is inclined to be stiff, a little sharp river sand. A good sprinkling of sifted bones, with a little charcoal and a little lime rubbish, will do no harm. Let these be well mixed and incorporated together. The soil should be well warmed in a stove before using it, or the plants will sustain a serious check, and when water is applied it must be in a tepid state. They will soon require another shift, which should be into eight-inch pots, and finally into 12-inch pots. Some people recommend larger pots, but then they are much more inconvenient to move about.

I invariably allow the canes to become about 8 feet long before stopping them, and then pinch off the laterals above the first leaf, when they have made five or six leaves. When they have perfected their growth they may be placed out of doors during their season of rest. In the autumn they will require some of the old soil to be removed from the surface of the pots, and about one-third down the sides between the pot and the ball, and replaced with rich compost as above. When they are pruned they must be reduced in length according to the size of the house in which they are to be fruited, but ought not to exceed 7 feet in length. If they have been well grown they will bear a respectable crop of fruit the following year; but Vines one year old, cut down to one bud, and grown a second year, may be expected to do much better.

As regards varieties suited for pot-culture, none can surpass the Black Hamburgh. The Frontignans also succeed well, and so does Chasselas Musqué, though it requires a dry atmosphere when ripening, or else it is liable to crack. I have also seen the Muscat of Alexandria do well, but I have not grown it myself. I would avoid the Golden Hamburgh, as under the best treatment I have never seen it succeed in a pot. Any one with but a very small amount of glass, when they can command attention, may grow good Grapes from pot Vines, and derive much enjoyment from their cultivation.—QUINTIN READ, *Biddulph*.

A WORD ABOUT STRAWBERRIES.

IN reference to the communication in *THE JOURNAL OF HORTICULTURE* respecting the successful mode of growing Strawberries, by "Quintin Read," *Biddulph*, I beg to make the following observations. Although I fully agree with him in many points, I differ widely in others.

We grow a great many Strawberries here with great success. We devote about three-quarters of an acre to Strawberry plantations. Our kinds are as follow:—Keens' Seedling, Sir Harry, Sir Charles Napier, British Queen, Oscar, and the Elton.

I plant and manage them exactly in the same way that your correspondent states, with the exception of planting in the three-and-a-half-foot beds, and allowing their foliage to remain till spring. I have, for instance, a quarter of an acre of Keens' Seedling in one bed. These were planted three years ago 3 feet from plant to plant in the row, and the rows 2½ feet asunder. Last year this bed produced some very fine fruit, averaging about twenty-two to the pound. After they had done fruiting the scythe was introduced to perform that barbarous practice that your correspondent says has happily passed away. After the scythe the knife came into operation, in trimming and cutting every runner and decayed leaf away, leaving only the young leaves that were not growing forth. The next

performance was to clear away the straw that was laid down to preserve the fruit from grit, &c. This was taken to the rubbish-heap and, with some pea-haulm and all the Strawberry trimmings, was set on fire, and all consumed together. The next work was to clear away every weed and runner that was to be seen; and from that time until the bed was littered down again for the protection of the fruit not a weed or runner was allowed to exist. By the end of October the plants were well stocked with fine healthy luxuriant foliage, and never as yet have they required any more protection than the garden walls surrounding them afford.

Now this practice has been in force for the last eight or ten years in this place, therefore I do not feel inclined to give it up so long as I meet with great success. For instance, the bed above mentioned yielded an extraordinary crop of fruit this season. On one occasion we picked two bushels at one time, and for three weeks little short of half a bushel was picked daily, and all of very fine quality.

The other kinds do equally as well in proportion. The scythe took its course again this season as usual. Now (the 2nd of November), the plants are nearly touching each other in the rows, many of them measuring 2 feet in diameter, while the crowns are firm, plump, and well matured.—J. B. C. P.

CALCEOLARIA CANARIENSIS.

THAT the character which many plants earn for themselves is as largely dependant upon circumstances as is the formation of the human character itself, becomes yearly more evident to those who keep an eye on the career of the various new varieties of plants which are dismissed from the careful scrutiny of the highest tribunals with first and second-class certificates.

In responding to the suggestion of your correspondent Mr. James Harris, page 333, regarding this *Calceolaria*, it could be amply demonstrated, if necessary, that "circumstances greatly alter cases;" and the sentence with which Mr. Harris concludes bears evidence that he is well aware of the fact. This knowledge any gardener who has practised in widely separated localities, differing vastly in soil and climate, must possess; and notwithstanding the slashing castigations which are so very commonly administered to floral committees and nursery firms for giving the weight of their authority to certain plants as being suitable for any given purpose, but which under some circumstances belie their character, it is productive in some minds of a charitable feeling towards the parties concerned.

My experience of *Calceolaria canariensis* would justify me in recommending it to all who wish to have a unique bed of yellow *Calceolarias*. Two beds of it here have this year been the admiration of all who have seen them. Not a single plant gave way during the intense heat and drought which we experienced throughout July and August; and when the heavy rains set in it stood the dashing much better than any of the others, and was gay a good while after they were all but flowerless in October. The opinion formed of it has led to every cutting being put in that could be had.

The beds in which it has done so well are well elevated above the surrounding level, and the soil is a rich open loam. Last season some plants of it that were planted in a damp place where the sun left it early in the afternoon, proved very similar to what is recorded of it by Mr. Harris. From this I conclude it likes a well exposed and not over-damp position. In pots it is one of the finest things I have seen, and yields an enormous crop of bloom; and for small beds it is likely, if it maintain its style of this year, to be most useful. Edged with blue *Lobelia* it is very telling, and being so dwarf the two suit well together.

It is exceedingly desirable when giving an opinion on our experience of plants similar to this, that the soil and position in which they have been proved should be named. I have learned to deal rather tenderly in giving an opinion on new bedding plants, having tried a vast number of some of the sections at least, and am well satisfied if one in a dozen proves worth growing. Yet, from former experience, I can easily believe that some which I have found next to useless here may be first-class in soils and climates the reverse of that in which I have proved them. As an illustration of

this, it may be stated that on the cold clay soil of Hertfordshire I always found *Geranium Improved Frogmore* far superior to *Tom Thumb*; while here, nearly on a level with the Firth of Forth, in a light deep loam and dry bracing air, *Tom Thumb* is far superior to *Improved Frogmore*. So, again, with some *Verbenas* which did exceedingly well on the cool clayey soil, but do no good here, and *vice versa*. It is no doubt with a knowledge of such facts that Mr. Harris pronounces so judiciously and cautiously on this *Calceolaria*; and I should wish to do the same. Were it necessary to illustrate any further, I might say that *C. Aurea floribunda* is quite second-rate here, while with Mr. H. it is first-rate; and so I believe it is in the west of Scotland, where the soil is heavier and they get more of the "Scottish mists" from the Atlantic. Hence it becomes very undesirable to pronounce sweeping condemnations with regard to bedding plants in particular, because pit-plants are generally subject to circumstances more alike all over the country. One gardener looking at the merits of a plant through the influence of a certain description of soil and climate, might insist against the evidence of another who views it under circumstances the very reverse; and the two might battle about it just as reasonably as if they were to pronounce on its size while they looked at it through the different ends of a telescope. On this account our opinion, to be really instructive, should be accompanied with the nature of the soil and climate in which flower-garden plants are proved. Another point to be taken into account is that any given plant may, from causes which it would be difficult to name, succeed one year and not the next, so that we should not be in haste to judge it not suitable or otherwise even to our own circumstances.—D. THOMSON.

NOTES ON GLADIOLUS CULTURE BY AN AMATEUR.

I HAVE read with considerable interest the remarks in many of your recent Numbers on the cultivation and diseases of this attractive and favourite plant. As I have had the good fortune to have grown it successfully for many years, I venture to lay the simple process of my success before my brother amateurs, assuring them that there is less difficulty in cultivating the *Gladiolus* than there is in growing *Dahlias* or even choice *Kidney Potatoes*. I am the more emboldened to do this, because by a simple application I saved my plants this year and secured a good display of bloom. I ought to tell you first that my locality is a cold wet part of Lancashire.

Well, when I first saw the complaints this year in your pages that *Gladiolus*-beds were showing unhealthy symptoms of decay, leaves turning prematurely dry, &c., I looked at my beds and found many of the plants slightly affected at the tips of the leaves, and the leaves themselves of an unhealthy colour. I at once gave the surface of the beds a good mulching of old rich manure, and during droughty weather gave the plants lots of water, which, of course, percolated through the top-dressing; and I assure you the change in the colour and the substance of the leaves soon expressed the grateful thanks of the bulbs below, and in due course an ample display of bloom followed. However, to describe my annual course of treatment I ought to begin, as they say, at the beginning.

I was induced to invest in a dozen bulbs by a London seedsman when the price was a much greater matter of consideration than at present. I took them with dread, for I feared the management would be beyond my ability. Well, I had a splendid show of bloom, which was greatly admired by my envious neighbours, accompanied by the usual sage nod of the head and remark, "Oh, yes, they are all very well, but you'll see you can't keep them through the winter." After the blooming was over my plants remained verdant without the slightest signs of going to rest. Cold weather and frost began to appear, and yet no signs of the plants ripening-off naturally, as I knew they ought to do; and equally well I knew that if they did not I might say good-bye to them. So without more ado I lifted each clump and deposited the lump of soil, bulbs, and stems, unbroken, into the dry soil of an exhausted Melon or Cucumber frame, and had the gratification to see the stems

ripen and drop off in a week or two, and the still greater gratification to find myself the possessor of an abundant brood of young offsets from each root; and I had the yet greater gratification of dislodging and consigning to a proper place a number of wireworms which appeared to have selected for their winter abode, or rather for bed and board, the snugger parts of each clump. My bulbs being perfectly dry and ripe were safely stored in bags until they showed signs of starting into growth again, upon which they were immediately potted, and in the spring turned out into beds again—beds I say, for the increase was three-fold of strong flowering bulbs.

For the sake of experiment, the following season I tried the effect of an immediate repotting and also replanting after the ripening-off in the frame; but the result satisfied me that the bulbs are the better for a short airing until they show signs of growth. Some show it sooner than others; but when they do show it then is the time to pot the bulbs and keep them gently growing until your beds are ready for them in spring. This plan has been with me so successful that I can confidently recommend it to my brother amateurs.

If I may venture to make a remark among so many learned doctors, who are now so sapiently giving their opinion on what they call the *Gladiolus* disease, I would say that in my humble opinion the *Gladiolus* is suffering from the overstimulating character of the feeding it has had for the purpose of counteracting the weakening effects of overbreeding. I would recommend a more plain, substantial, and healthy diet as the best means of securing a more healthy progeny, even if we amateurs should be called upon to pay the doctor's fees in the shape of an extra price for healthy bulbs.—W. W.

P.S.—I have been surprised to find how few ladies know the valuable property which the *Gladiolus* has of opening its bloom in water. I have seen more than one fair dame throw the stem away as soon as the first bloom faded, little thinking that a day's patience would have been rewarded with another glorious flower higher up the stem, and so on day by day for weeks of pleasure.

WINTERING BEDDING-OUT PLANTS.

Among the seasonable operations of the present time, is one that more or less engages the attention of every gardener—that is the disposal of the bedding stock. Every gardener who has much to do in the way of bedding, is at this time of the year put to various shifts from want of space, every inch of which is required, both for plants that are to continue under glass, and for those that are to be turned out shortly. Every one who reads the weekly notes of Mr. Fish will see, not only the difficulties under which he labours for the bestowal of an immense bedding stock, but the ingenuity with which he meets those difficulties. Whatever opinions may be formed by the ordinary reader of the contrivances he makes use of to clear the houses and harden-off the stuff, it is only the practised gardener who can thoroughly appreciate them, and of these only such as are in the habit of contriving for themselves.

It is very well to remind the possessor of frames and shallow pits, that he should get his plants into them so that he can harden them off by pulling the lights right off every day; but what is the use of such advice to those who have no such appliances, or, who, having them, find them already full to repletion? It then becomes necessary to look about for some other contrivance; and one of the most ingenious is that described by Mr. Fish, and of which I intend to avail myself, thanking him for the hint—that is, to dig a trench as for Celery, and to lay sticks across it on which may be placed mats or any other covering. The plants may be packed closely together in the trench, and as bedding stuff seldom exceeds a foot in height, it is easily accommodated in this way; and while it is in a great measure protected from cutting winds, a slight covering will protect it from such frosts as we are likely to have at this time of the year.

But what I would recommend as most useful where such shifts have to be made, is coarse felt stretched on light wooden frames of a convenient portable size. These have been well known for some time, but I have not seen them for some years. They are made of a material that is not so easily displaced by wind.—F. CHITTY.

frames, and protecting plants when not under glass. Without wishing in any way to disparage the ordinary garden mat, which is indispensable, and useful for many purposes, yet I must say that felt is equally so, and for some purposes superior, as the frames covered with it are not so easily displaced by wind.—F. CHITTY.

ROOTS AND LEAVES.

(Continued from page 333.)

WHERE Vines grow in carrion-borders, which are one mass of putridity, little beyond fleshy-root-extension takes place. Very few fibres indeed appear at any time; the stems require less heat to cause the buds to swell and break; the growth appears small, but gross and long-jointed; and the leaves, though small at first, become something like a Rhubarb leaf. At this stage, if we examine the roots, we shall find little or no fibres, active or inactive; but the plant appears as if it depended on the humus absorbed by the root-stems for its nourishment, or is indebted for its nutriment to the atmosphere by which it is surrounded. Whether the plant owes its development to the nutriment collected by the roots without fibres, or to that collected by the leaves from the atmosphere, the leaves will flag when the moisture in the atmosphere is dissipated by the sun's influence rendering the parts about the leaves drier, and causing the leaves to perspire, or the water in them to be evaporated more freely than in cloudy weather. If the leaves flag under bright sun, it is an evidence of deficient root-action or a want of moisture in the atmosphere; but flagging is chiefly caused by the leaves evaporating more water than the roots afford them. If there be a quantity of fibres the case will be different. Instead of the plant having one month, it will have fifty; and it is only reasonable to conclude that a plant with fifty mouths would absorb more nutriment, and supply the wants of the leaves better in a case of emergency when extra food is needed, than a plant having only one.

Fibres, then, are necessary to a Vine's healthy development, and the extension of the main roots essential to the formation of fibres. There cannot be healthy development in a Vine, or any plant with a fibrous root, without fibres: hence the immense importance of their preservation, and the necessity of promoting their production. Rich soils hinder the production of fibres; poor soils increase their number. Plants grown in rich soil have more foliage and less fruit than the same species in poorer soil.

I am led to infer from this that fibres are the chief agents in the production of fruit-buds; and although I am but partially prepared to prove it, I am persuaded that they are the sole agent employed by the roots in their production. But we were considering the annual reproduction of fibres. I contend that all plants do partially lose the old fibres annually, some plants oftener. Superficial evidence alone is forthcoming in abundance to prove the fact, without calling to our aid any internal evidence at all. We give warmth or bottom heat to plants at the commencement of forcing, keeping the atmosphere comparatively cool to induce root-action before leaf-development commences. What necessity is there for this extra stimulant to the roots if their extremities are prepared to absorb nutriment on the expansion of the buds? Nature gives no such stimulant. It is a point, in fact, that proves the roots have not the requisite elements, lying dormant and only needing the expansion of the foliage, to call them into activity. In all cases of repotting the cultivator finds a quantity of dead fibres in addition to the growing, and attributes the presence of the dead fibres to an unhealthy root-action; whereas such is not the case, for, if there is a quantity of live fibres in addition to the dead, it is evident that what suits them would suit others. Sour soil very often causes the destruction of all the fibres of a plant; but that has nothing to do with the periodical decay of the fibres, being simply a medium in which the fibres cannot extend themselves.

Although the fibres are of so much importance to vegetation, there are cases in which their removal, instead of being hurtful is highly beneficial. Mr. Rivers actually destroys fully half of the fibres of his orchard-house trees every autumn in the process of winter pruning. At page 30 of his

"Orchard-House" he thus describes his practice:—"Take out a portion of the soil, 5 or 6 inches in depth, and about 4 inches in width, all round the side of the pot, leaving the central mass of roots undisturbed. A portion of the mould may, however, be picked out from among the mass of fibres with advantage, as fresh food can do them no harm," &c. Now, would so practical a cultivator destroy annually the points of the fibres if he knew that Nature demanded their preservation? He must have known the contrary, and so anticipated Nature by helping her to do at once what she would have done herself from the fall of the leaf to the commencement of growth in the ensuing spring. But Mr. Rivers is careful to preserve the woody portion of the fibres: it is from these, which may not improperly be termed ripened roots, that the fibres are emitted in the spring. Neither does he destroy the fleshy roots, from which the fibres on their first formation are emitted, but he leaves them entire or undisturbed at the bottom of the pots, and he rams the fresh soil, so that no root can run easily in it without emitting fibres. The same is done with Strawberries in pots for forcing, the object in both cases being to prevent the fleshy roots from extending, and thus to favour the production of fibres. Unless the soil in a Strawberry-pot is pressed very firm, the fleshy roots that strike from the root pass through the soil and out at the pot-bottom without emitting so much as a single fibre on the way. If, however, the roots are arrested in their journey by coming into contact with the sides of the pot, fibres are emitted, but only there; whereas the object is to fill the whole of the soil with fibres, and thus give the plant as many mouths in a six-inch pot as it would have when planted out and having roots penetrating to 2 feet deep.

The same appears again with any plant under pot-culture. An annual potting and a few after-shifts are all that is necessary to supply the wants of a plant. The annual potting is accompanied by a disrooting and an addition of fresh compost. Geranium-growers disroot so much annually as to necessitate the placing of the plant in a smaller pot. They one and all do precisely the same as Nature herself would do were she left alone. They limit root-action to a given space, and supply the wants of the roots in that space, obviating the necessity of their having to run about in quest of nutriment. In nature it is the reverse. The fibres are formed at or near the stem in the early stages of a plant's development; but after a time they are present at the extremities of the main roots, and where are those fibres that were formed near the stem of the plant? Have they become large roots with numberless fibres at their extremities? No, the large roots are but few in number; but had the fibres extended proportionately with the increase of the head, they would have been a multitudinous cluster of large roots extending from the stem in all directions. As it is, however, the fibres have not become large roots nor are present in the soil. The head has extended and shut out the rains from them; their part in the vegetable economy is accomplished, and they perish. But Nature does her work gradually, and fresh fibres are formed in other directions simultaneously with the decay of those first produced and now become useless.

I shall not pursue the periodical decay of the smaller fibres any further, for the materials at my disposal are so numerous that to recite all would extend this communication too much: but I must state that bulbs lose their roots annually, which are simply fleshy roots, identical with the fibres of woody roots which decay periodically, though very far from annually. If the roots of a Peach or Vine be examined after the leaves have attained their full size, a quantity of dead fibres will be seen, and from almost every division of the fibres new spongioles will be found either emitted or in course of being produced, evidently destined to supply the place of the decayed. Mark, it is the small fleshy fibres that decay, and not the wiry woody part. There are exceptions to all rules, and tree Ferns appear not to lose the extremities of the root except from accident. They always have some dead roots, but what I mean is that new roots are emitted direct from the stem, and travel a great distance without losing any part of their extremities, and when the point dies the root does so entirely, new roots striking out direct from the stem to supply its place. Roots of all kinds have a periodical discarding of some of their

parts; in a bulb it is the whole, in a tree the fleshy parts of the fibres, and herbaceous plants change them entirely throughout their whole length. An evergreen, even, undergoes the same process, but more continuously than periodically.

The dying-back of the fibres is necessary to the existence of the plant, for if they continued to grow year after year without throwing off any of their parts, the roots would become larger than the head, whereas they are on an average only one quarter of its size and weight. Another reason is, that if the fibres passed but once through the soil in which they are situated, they would leave a quantity of unexplored matter behind them, and when once out of it they could not return to collect the food it contained. But by renewing the fibres the soil is penetrated in all directions, and all the elements essential to the development of the plant are pretty much exhausted, so that a plant does not succeed well on the same ground after the growth of another of the same species.

Before leaving fibres allow me to add a little evidence in support of my opinion—"Fibres are the chief agents in the formation of fruit-buds or a plant's productiveness." Presuming that we have two fruit trees, both seedlings, and we allow one to grow freely without any curbing or checking of its development; and suppose we treat the other in an opposite manner, transplant it annually, and instead of letting the roots run where they will, curtail or limit their action: the one, as we all know, will become a large tree and the other a dwarf; the one is barren and the other fruitful; the one has roots the thickness of a finger, but the other has them smaller than a grass stalk. Both, however, have fibres, but in the tree left to Nature these can be counted, whilst in the other they are numberless. But the fibres, I may be told, are due to transplantation. Certainly transplanting increases the fibres; a plant that had one spongiole before transplanting will have fifty in the following season, and these are unlike such as would be produced by the untransplanted plants—they are smaller, have shorter divisions or branch more, and collect food slowly, whereas, in the other case they collect nutriment rapidly, and this having a straight channel to run in is transmitted to the stem and leaves with greater rapidity, and the growths made are strong and anything but branching—they have the character of the root. But the transplanted subject makes short growths, is stunted, having also the character of the root.

To recapitulate: Free root-action induces free growth and unproductiveness; transplantation promotes the production of fibres, fibres create stunted growth, and stunted growth gives bloom-buds. In this way we have Apple, Pear, Plum, and Cherry trees the size of Rose bushes, producing fruit equally fine and large with those grown on large orchard trees that are years before they come into bearing. The former are made to produce fibres by annual or biennial transplantation, but the latter have their freedom and make growth in proportion to the food taken up by the roots. The aim of a plant is to perpetuate its species, and it has the power of adapting itself to circumstances. If its seeds are dropped in a rich soil it is longer before it produces seeds, and if they are placed in poor ground it grows slowly, has innumerable fibres penetrating through the soil, and produces seeds in half the time and when half the height of its congener. There are more fibres on the latter than the former, and fibres are the cause of fruit-buds being formed.

Further evidence is forthcoming in the case of a luxuriant-growing tree and barren. Pruning and every other means avail nothing to overcome its unproductiveness. Root-pruning, however, is resorted to; the straight and broad channels are made crooked by the emission of fibres, and the barren tree becomes fruitful. Again, we have two plants (fruit trees) and wish to force both, but we will plunge one in bottom heat and keep the atmosphere cool for a fortnight or until root-action commences; the other we keep cool during that time, when we place it in the same atmosphere with the other, with or without bottom heat. At this stage the one has a quantity of newly formed fleshy roots (according to its kind), which have reached the sides of the pot, and the presence of which the gardener hails with delight, but the other has no roots beyond those of the previous year. They both commence growing, and the first is strong, and the growth close-jointed but not gross; the

growth of the second is small though rapid, the leaves small, thin, tissue-like, and altogether unpromising. After both have grown a foot, let us examine the roots. That pot plunged in bottom heat is one mass of thread-like fibres, but the other has only a quantity of fleshy roots, the same as that plunged had when forcing was commenced, or rather when top heat was applied. We leave them growing and it comes a sunny day; the first holds its head boldly to the sunbeam, but the second shrinks back and flags. However, the weak plant in time gains strength and makes wood equally strong with the tree that has been in the hotbed. Looking at the roots of the former we find a quantity of fibres. That is enough.

Now, suppose these plants were Figs. That with fibres will have fruit nearly at every eye; but the other has none at any of its eyes except a few at the tips of the branches. What is the difference between the growth of the two? The first had fibres to begin with, and it formed fruit-eyes at every joint; but the second had no fibres, and it formed wood-buds only until fibres were emitted. If we suppose they were Vines, the results are precisely the same: there are no fruit-buds formed when the growth is made by the fleshy roots only, but there are when it is made after the emission of fibres. Surely the evidence is conclusive.

Stopping the branches is not the direct cause of the formation of fruit-buds. All stopping simply limits the action of the roots, induces the formation of fibres, and if it does not the eyes below the stopping start into growth. A wood-bud has been formed, for buds are formed with the leaf, and not afterwards as is generally supposed. After the leaf is formed, the eye at its axil is either a wood or a bloom bud, and no stopping whatever can transform them either way. Vines will show fruit on green laterals if the eye forced into growth is a fruit-bud. No hardening or ripening of the wood can form fruit-buds, but they are solely attributable to the peculiar condition of the roots at the time of development.

The production of fibres being so essential to the well-being of a plant, their preservation and production are matters of import to all cultivators. I may, therefore, tender a few humble remarks and hints as to their preservation or removal.—G. ABBEY.

(To be continued.)

CENTAUREAS ARGENTEA AND CANDIDISSIMA.

As *Centaurea candidissima* is unquestionably one of the most important additions made to our flower gardens for some years, the advent of a kindred species with foliage more beautifully cut may be regarded as another advance in the path of out-door embellishment; and *C. argentea* has been ushered in with a high name as likely to eclipse its predecessor. Its claims to this distinction as a potted plant may, perhaps, be admitted, though I am by no means certain that they will be so; but what little I have seen of it out-doors inclines me to place it many degrees below *C. candidissima* as an effective plant for the flower garden; in fact, judging from the plants we have here, I should say it is not so good as *C. gymnocarpa*, of which there is a bed or two at the Crystal Palace, and which I see a correspondent at page 213 notices. I quite agree with him as to the good effect produced by *C. candidissima* and *Amaranthus melanchochilus* in one bed, although I was otherwise well pleased with the main features of the planting.

Leaving this subject, however, might I ask through the pages of your Journal which is the best *Centaurea* for bedding purposes? Mr. Thomson in a former article mentioned *C. ragusina*, a species I am not acquainted with. Is it the same as *C. candidissima* or not? The flower-gardening public must, I am sure, be much indebted to Mr. Thomson for his excellent article on the propagation of this highly desirable genus, which I hope to see extensively grown when it can be had in sufficient quantity; but in the meanwhile I should like to learn from those who have grown all the species which is the best. For my own part I am all content with *C. candidissima*, and its appearance here excels that of *C. argentea*; but if others think differently let them record their opinion. The small-leaved *Centaurea* mentioned in your issue of the 11th inst. is a very good one.

more robust kinaman, *C. Biebersteinii*, but the former still retains its place; and what I have seen of *Centaurea argentea* inclines me to think that it will still less approach its forerunner in merit.—J. ROBSON.

HEATING A GREENHOUSE FROM A DINING-ROOM FIRE.

A *Devonshire Vicar* would feel much obliged by information regarding any effectual plan for making use of the surplus heat from a dining-room grate (by means of hot water or air), in warming a greenhouse situated at the back of the fireplace, and on the same level as the room. Are there, for instance, any grates with boilers attached, from which pipes could be carried, which would not be a disfigurement to the room?

[If the greenhouse is small, a square plate of iron, fixed at the back of the grate, and open to the greenhouse, and black on both sides, would, with the heat of the chimney, keep out frost, if the fire was banked up at night on the occurrence of cold nights.]

This could be done better with a boiler at the back of the grate, but we question if you could have one so made without an order. There are many stoves with a boiler at the back and one side, but that would not be so elegant. If at the back it would be best to have a close boiler fed with water from the pipes in the greenhouse. The pipes must not be below the boiler, better above it; but you will have to confine them chiefly to the back and ends if there is a doorway. As most dining-room grates are manufactured in pieces, a small boiler might be formed at the back, and one side open to the greenhouse, where the pipes could be fixed. We remember one so arranged, and it would have done very well, but the fire in the room was not always used, and it was considered a grievance having to kindle a fire there when not otherwise wanted. In a cold night coke was heaped up round the boiler, and a plate of iron placed in front to prevent too rapid combustion.]

STEPHANOTIS FLORIBUNDA FRUITING.

Is it not rare for this *Stephanotis* to fruit in England? I have fruited it before, at Crom Castle, but the fruit was small, and did not come to perfection. Now, I have a plant with seven fruits on it measuring, on an average, 5 inches in length, and 8 in circumference. The fruit is of a conical shape, the colour a light green. Will it get much larger? What colour will it be when ripe? and is the fruit eatable? When I received this plant in December, 1882, it was in a 32-pot. I have shifted it on, and now it is in a No. 2-pot and trained on a wire globe.—OLIVER MORRIS, *Tolmers, Hertford*.

THE VARIEGATED ARABIS.

SOME years ago a discussion took place in the pages of this Journal about the name of this highly ornamental plant, some calling it *Arabis lucida*, others *A. albida*; but I believe that commonly the specific name has been dropped, and the plant has been well known as the Variegated *Arabis*—a name at once easy and every way sufficiently expressive so long as only one variety was in cultivation. I have heard, however, that another feature has been given to this useful and compact-growing plant. The pale yellow, or rather cream-coloured, edging of the old variety is said to be turned to the more golden lacing of the best of our Golden *Geraniums*, or the yet more bright hue of the Gold-leaved *Holly*.

If this really be the case, the plant will in many instances supersede the *Geraniums* of the same hue, as it is perfectly hardy, and in habit as compact as could be wished for.

I confess, however, that I have not yet seen this *Arabis*; and possibly it may only be a slight improvement on the old one, or merely the latter grown under circumstances more favourable to its becoming more of an amber hue. I have had the old kind for many years, and now and then a plant or part of one will assume the normal form, and the coarse green foliage of the original parent will appear; but it is not likely to mix into that condition hereafter.

variegated plants, and, taking it altogether, it is a beautiful appendage to the flower garden. Still, if the plant has undergone further improvement, and it has gone forth to the world attired in a yellow jacket, I for one shall be happy to learn where it is to be obtained.

Perhaps some of your readers will enlighten us on this subject, and describe what the improved plant is like and other relative matters, omitting if they choose all mention of the name, which may or may not be one or other of those mentioned above. The "Golden-edged *Arabia*" is expressive enough, and if it does in reality exist, I hope that its possessors will not keep it unannounced.—J. R.

SOME GARDENS WORTH SEEING.

CORNWALL.			
Name.	Proprietor.	Gardener.	Station.
Pentille Castle	A. Coryton, Esq.	Mr. Edwards	Saltash.
DEVONSHIRE.			
Endsleigh	Duke of Bedford	Unknown	Tavistock.
WORCESTERSHIRE.			
Hagley Hall	Lord Lyttleton	Mr. McKay	Hagley.
Stourton Castle	W. O. Forster, Esq., M.P.	Mr. Mason	Stourbridge.
Lea Castle	J. P. B. Westhead, Esq., M.P.	Mr. Gough	Kidderminster
Spring Grove	W. C. Hemming, Esq.	Mr. Faulkner	Kidderminster
Moor Hall	Rev. Turner Farley	Mr. Phippen	Stourport.
Stanford Court	Sir T. E. Winnington, Bart. M.P.	Mr. Stewart	Worcester.
Westwood Pk.	Sir J. Pakington, Bart. M.P.	Unknown	Droitwich.

—H. C. K.

[We are obliged for the above as well as for all others which have been forwarded to us, and we hope that such lists will continue to be sent. These lists need not include only first-rate show places, but might very advantageously specify gardens on a smaller scale distinguished by the taste with which they are arranged.]

GARDENERS' NAMES FOR FLOWERS.

"WILTSHIRE RECTOE" at page 328 of THE JOURNAL OF HORTICULTURE says that he is quite sure that well-educated gardeners will say Amen to his remarks on this subject. I am afraid that I am not sufficiently educated to do so. I have generally found gardeners (entitled to the name) anxious to pronounce the names of the flowers and fruits they cultivate correctly, and they usually succeed in doing so as well as may be expected.

To instance the "beer-loving fellow," or the one who would offend the delicately correct ear of his lady employer by calling her *Cyclamens* "Sickly uns," and whom she no doubt dignified by the title of her head gardener, and possibly remunerated at the munificent rate of 10s. or 12s. per week, is about as fair as it would be to form an opinion of the eloquence, &c., of clergymen generally by listening to the men we occasionally hear holding forth by the waysides and corners of streets. The *Géant des Batailles* Rose and the *Bon Chrétien* Pear are well-known varieties, and I admit to having heard them variously pronounced, but I have never heard anything applied to them approaching to "Johnny Bottle" or "Bun Christian;" and I feel quite sure that the "beer-loving fellow" must have been quizzing his reverence, who did not perceive it.—G.

VARIA.

I AM always glad to see the letters from amateur correspondents which every now and then appear in your Journal. Much good may be done by persons residing in different parts of the country sending up simple statements of their successes or failures in horticulture. It is, in fact, only by this means that any certain conclusion can be drawn with regard to a new and doubtful phenomenon, such as this *Gladiolus* disease, which is now occupying so much attention.

Although both my experience and the rectory garden, from whence it is derived, are small compared with the resources of many of your correspondents, perhaps you will be glad to get some jottings from the far west.

In the first place, then, with regard to the disease in the *Gladiolus*. I have from seventy to eighty bulbs altogether: about forty of them are *gandavensis*, and it is in them alone, and only in two bulbs, that the disease has appeared. The

bulbs were brought from Jersey in the autumn of 1860: this was, therefore, the third season I have had them under my care. As they increased rapidly, I determined this year, for the first time, to try some in the peaty soil of a *Rhododendron*-bed. This soil was brought in some years ago from the downs by which we are surrounded, and consists of a stiff, black, fibrous peat, used by the neighbouring cottagers for fuel until they were prohibited from so doing. In this soil *Rhododendrons*, *Azaleas*, &c., flourish and attain an immense size. Here, then, among, or rather in front of, the shrubs I planted some *Gladiolus gandavensis*, while others were placed, as in former years, in a flower-bed well manured with rotten leaves and the remains of an old *Cucumber*-bed. The latter flowered splendidly, and I expect shortly, when I take them up, to find a rich harvest of sound and healthy bulbs. The former also flowered well, but in two instances the disease appeared, exactly as described by several writers in your Journal. Fearing the possibility of infection I took up one. The old bulb had as usual decayed away; but the two new ones found upon it were evidently diseased, not having attained more than half their ordinary dimensions, and the outer scales falling off soon after they were taken up, leaving the inner solid portion white and naked. I cannot, however, detect any rotten part similar to that which appears in the diseased tubers of the Potato. My first impression, when I saw the leaves withering, which took place in the hot dry weeks of July, was that the bulbs wanted water. They were liberally supplied, but to no purpose. I leave these facts to the consideration of "D., Deal," and others who are trying to get some reliable data concerning this curious disease.

Your correspondent, Mr. G. Abbey, in his interesting article on "Roots and Leaves," page 332, says, speaking of a leaf-cutting of the *Gloxinia*, "the leaf imbibes moisture from the atmosphere." Can he give us any proof of this? Prof. Huxley in his "Outlines," published in 1846, page 101, says—"It has been sometimes imagined that leaves also possess the power of absorbing fluid, especially in those plants which live for a long time without roots. It may be assumed that absorption is never, or at least but seldom, exercised by leaves in a normal condition." Lindley, however, in the latest edition of "School Botany," page 193, says—"It is by means of this apparatus (stomates) that leaves absorb water and gaseous matter from the atmosphere." Which is right? Is this case of the *Gloxinia* leaf one of those exceptions of a leaf in an abnormal state, which even Professor Huxley would seem to allow may possibly occur? Or does Mr. G. Abbey agree with Lindley, and suppose that leaves in their ordinary condition absorb moisture through their stomata, instead of those orifices being simply used for the purposes of evaporation and exhalation? Would it be troubling him too much to ask him for further information on this point?

We, who live in the west country, are supposed to pass half our time in a sort of warm vapour bath, produced by constant mists and fogs. There is some truth in this commonly received notion. Even this year we could not be said to suffer from dryness or heat, though we thoroughly enjoyed the luxury of a few really hot, dry days in succession. But even our climate seems to be too dry for *Mimulus cupreus*, which, though very pretty in itself, is useless apparently for bedding purposes, on account of requiring so much water. It will make, no doubt, a useful ornament in the conservatory.

I failed in the *Amaranthus melancholicus* by putting out the plants both too small and too soon. Those which were kept in the greenhouse grew into strong, bushy plants, and on an upper shelf close to the light were extremely beautiful. They were fed with a very strong solution of tank manure, and seemed always to thirst for more. I was obliged about a month ago to turn them out to make room for other things, when they soon succumbed. But with the experience of this year I hope to be more successful with them out of doors next season.

Humus which stood out unprotected last winter, were finer this year than those kept in the greenhouse, attaining a height of 7 to 8 feet, and branched in proportion. These also were in the peat above mentioned, as well as some *Tritomas*, sown in the spring of 1862, now large plants, which I hope will flower next year.—S. L. G., *Downend*.

MITRARIA COCCINEA.

(SCARLET-FLOWERED MITRARIA.)

Specific Character.—Plant a shrub. Stems climbing. Leaves opposite, small, ovate, acute, serrated. Flowers axillary, solitary. Peduncles slender, about 2 inches long. Bracts mitre-formed, covering the calyx. Calyx five-parted. Corolla of a brilliant scarlet; tube ventricose, $1\frac{1}{4}$ inch long; limb bilabiate; upper lip with two rounded lobes; lower lip three-lobed, lobes smaller than the upper ones. Stamens four, exserted.



This is a most ornamental climbing shrub, having the habit of *Columnea*. It is a native of San Carlos de Chiloe, and was introduced by Messrs. Veitch & Son, who received it from their collector, Mr. Lobb.

The leaves are small and neat; and the flowers, of a vivid scarlet, hanging gracefully on long, slender peduncles from the axils of the leaves, give it when it bloom more than an ordinary share of attraction.

This genus, *Mitraria*, was founded by Cavanilles; the name being derived from *mitra*, a mitre, in reference to the mitre-formed bractea which covers the calyx; and is a very different plant from the *Mitraria* of Gmelin, which is a *Barringtonia*. The subject of our present woodcut is the only species at present known, although it is not improbable but subsequent collectors may yet meet with other, and, perhaps, still more valuable members of so beautiful a genus.

The cultivation is easy. If the plant be grown in a pot, lay abundance of broken crocks at the bottom for drainage; and for the soil, use a mixture of two parts leaf mould, one part light rich loam, and one part peat; but if it is planted in a border, any light rich earth or good vegetable mould will suit it well.

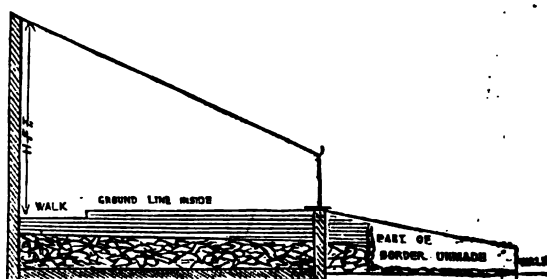
Increase is effected by cuttings of the half-ripened wood, planted in pots of sand and placed under a hand-glass.—(*Paxton's Magazine of Botany.*)

TRENTHAM.

(Continued from page 356.)

PASSING along the east aspect of the west wall, which is also devoted to Pears, as on the other side of the garden, but without any glass case; here, too, there was a good crop, showing that the bloom against the wall resisted the frost which was found so injurious to the blossom in the open though sheltered quarters, and on trellises and arches. Here also the trees had been side-grafted with many kinds. Under the glass case, the stems and branches had a brownish colour, having been painted with a composition of soft soap, sulphur, cowdung, and clay. Anon we reach the long range of houses with the appropriate buildings behind, which have already been mentioned in this eastern boundary.

near to Mr. Henderson's residence. Between this and the Pear-trellised walk are placed the houses on the west-side of this main kitchen garden.



We commence, then, at the west end of this range, commonly called the Muscat range, and enter first into a long house filled with young Vines, of which the accompanying section is from memory, only we think that the inside border was only partially made. We introduce the section chiefly to show the system of border-making, the border inside and outside being entirely above the ground level. The house is 11 feet in height from the path inside; the pathway is 4 feet wide; the front is about 2 feet above the sill, which rests on pillars, so as to give free egress to the roots outwards. The width from back to front is 16 feet. The sill, if we recollect aright, is of wood, cased in zinc to protect it from the damp earth. The outside border is 12 feet wide, and it will slope from the sill to the front, where it will be shallower. At the back, close to the sill, it will be $2\frac{1}{4}$ feet deep, with 18 inches of large stones and rough rubble underneath. The soil was the best thin top-spit, with a fair allowance of boiled bones. Some of the bones that we examined were quite sweet, crumbling in the centre, and the roots passing through them. The outside of the bank of earth above the stones consisted of the roughest pieces of turf, and the air passing between the seams would render them very dry in the weather. This very fact would have a tendency to send the roots back into the more moist soil behind. It was pleasing to find Mr. Henderson practising so largely, and not by any means in this house alone, the bit-by-bit system of border-making, which has frequently been recommended in these pages. This is done, not merely because part of a border can be more easily and conveniently made than a whole one, but because this bit-by-bit system contributes so much more to the continued luxuriance and fruitfulness of the Vines. When the roots have thoroughly permeated the yard width of the border as shown in the section, then 2 or 3 feet more will be added in a similar way. Had the border been made to the front at once the roots would have run along to the front, though there had been comparatively few lateral rootlets; and before these interlaced the whole border much of the nourishing properties of the new material of the border would have been dissipated by decomposition and evaporation. Making a large border at once, and especially out of doors, seems somewhat analogous to the farmer turning a flock of sheep into a field of Turnips, and allowing them to run and nibble where they may. The piece-by-piece border-making may be compared to folding the sheep, so that every available scrap of food shall be made use of, and a demonstrable compensatory influence be left behind them.

The young Vines had been planted inside near the front of the house in July, 1862, and were now strong rods, reaching to and beyond the top of the house, and were fast taking the desirable brown colour. The laterals, that had been somewhat freely encouraged to promote root-action, had been removed to increase the ripening of the wood and the plumpness of the buds. We were pleased to find, that for mere strength of stem in young Vines and Vines in pots, Mr. Henderson depended more on a free growth of laterals in the early part of the season than on mere length of shoot and stem. These Vines he proposed shortening considerably in a fortnight to concentrate the strength near home—and in winter or spring he would shorten back to about 1 foot from the border. If he has not already shortened

these cases it would be a good chance to try removing all the buds above the requisite height, and allowing the shoots to remain at their present length until the leaves had fallen, and then to compare them with those that were shortened as proposed. Few men have such opportunities as Mr. Henderson of making and testing such experiments, even if they had a good share of his enthusiasm. A few Vines were bearing a bunch or two, and among these the Gros Maroc, with large oval berries of a dense dark colour, which it is supposed will be first-rate in February or later. This we had not seen before, but if it stand the test of experience it is likely to be better known. The back wall of this house is clothed with Guavas, Camellias, Citrons, Oranges, &c.

In making a border of such fresh materials and planting at midsummer, Mr. Henderson told us there was a risk of having too much bottom heat. That we can well believe, for in a border which we once saw made in the beginning of September, chiefly from thin parings from a pasture with the grass on, a thermometer placed at 15 inches deep rose to 110°; and, again, when once we noticed Vines raised in October and replanted into such material that had been thrown together for a few months to drive off the rankness, the gardener, before covering the border with dung to throw a little heat in, found that a little litter was all that was required for the border, by feeling that the trial stick was quite warm enough to encourage fresh rooting directly after transplanting. We mention this that such fresh borders may be examined, and, perhaps, they would be still warmer if a good quantity of bones were used.

The next house in the range is one of the finest to be met with, and was put up by Mr. Fleming in 1858. It is 140 feet in length, 19 feet in width, inside measure, 12 feet high at back from the floor, and 2½ feet high in front. The back wall is built in the usual way. The front is supported by brick pillars 14 inches by 9, to the depth of the Vine-border. These pillars are headed by a stone cap, into which the mullions, or studs, between the front lights are dowelled, the upper ends being tenoned into the wall-plate. These studs are 5½ by 4 inches. The whole of these upright lights are hung on pivots 8 inches from the top, and are all opened, less or more, by a movement-rod of 1½ inch, curved stay, and winch; the whole front being opened by three of these movements, any one-third being done at once, and with or without the others in succession. The roof is formed of wide ridge-and-furrow, running transversely on the rake at an angle of 21°. There are twenty-six spans in the length. The height to the ridge of span would be about 16 inches. The ridge-and-furrow terminates about 26 inches from the back wall, being finished there with a rail, the openings beneath glazed, and on this rail rests in front a narrow light of the above width all the length of the house. By a patented screw apparatus fixed against the back with movement-rod, curved stays, &c., the whole of this glass coping may be raised from 1 to 20 inches by three lifts, or three sets of instruments, each managing, therefore, about 47 feet. The chief peculiarity of the house has yet, however, to be mentioned. The sides of the span of the ridge-and-furrow do not join together at top in one ridge or apex; each has its own, and there is a space of 4 inches between them covered by a moveable ridge-cap, which when raised can admit on each side from the smallest amount up to 3 inches of air. In the opening of each ridge, at regular distances from top to bottom, are five brackets to which hinges are attached at the bottom, and the top of the hinge is attached to the ridge-cap, and works on the principle of a parallel ruler. The top hinge of each ridge is connected by stays, joints, and rods to the same apparatus against the back wall, and three of these will at three movements lift the caps of all these ridges. The first time we noticed moving the caps of a ridge-house for air-giving, was in a small span-house at Messrs. Lee's, at Hammersmith. A simple lever elevated the cowl, but carried it at the same time lengthwise out of its usual position.

Most people would have imagined that 20 inches at top, and as much or more in front, would have been air enough for common occasions. If, as some contend, the admission of air equally all over a house is an essential of success, then there can be no question, not only of the ingenuity but the great usefulness of such a mode of lifting the ridge-caps. Mr. Henderson assured me that with the most ordinary care burning and sacking were next to impossible in such a house,

as in the hottest days the temperature within could be kept down so as not to be above 2° or 3° warmer than the air out of doors—a feat which he could accomplish in no other house under similar circumstances. We would not suppose for a moment that Mr. Henderson would thus wish to assimilate the inside to the outside temperature in a hot day; but there can be no question that the means of giving plenty of air and in the best manner is one of those important questions to which we can scarcely attach too great consideration.

The gutters of the ridge-and-furrow are lined with lead, and empty themselves into an ogee iron gutter, whence the water is conveyed to a large tank beneath the border, on the west end, inside the house, and as hot-water pipes pass through it, the heat of the water will generally average 80°—a matter of great importance as tending to the health and luxuriance of all tender exotics. We can fancy the run that would be made on this reservoir of warmed soft water. From this and the heating apparatus the nice clean bathroom of the young men behind is constantly supplied with water in all stages from cold to hot.

The somewhat heavy roof is supported about the centre by neat iron columns at every second gutter, and tied by neat transverse arches between. There is also a dwarf trellis in front of the back wall for such things as dwarf Oranges, &c. The back wall was covered with Figs, Shadocks, &c., but the Vines did not let them have overmuch light. The Vines were chiefly Muscats doing well, the youngest, especially, having massive bunches, and there were besides, some late Black Grapes in fine condition, among which were very fine specimens of Barbarossa, huge in bunch, large in berry, and very black. Many facts tend to confirm us in thinking, that to have the Barbarossa fine it requires as much heat as a Muscat. Part of these Vines had been lifted and replanted inside in February—in fact, the moving of Vines in the midlands seems nothing thought of, and yet the crops do not seem to suffer. A small border only has been made outside, and that would be added to when the Grapes were cut.

We next pass through two Peach-houses, first and second, bare of foliage, and waiting an opportunity for pruning and washing. The back walls are covered, and there is a wide circular trellis in front, from which an arch goes to the back wall at every 12 feet as in the narrow houses. The pillars that support the back of the flat circular trellis are 4 feet in height, and 4 feet from the back wall. At that height in such lofty houses the back wall is not injuriously shaded. After pruning, the trees are well washed with soap and water, the surface soil renewed, and the wood all painted with a mixture of clay, cowdung, sulphur, tobacco juice, and a little glue to make it stick all the better. A good deal of last year's painting was still sticking on the wood of the trees, which were in fine condition for bearing, leading to the conclusion that many of our preconceived ideas as to absorption and perspiration through the bark may be somewhat modified in practice.

We have now traversed the boundaries of this main garden, and arrived again at the main central walk from north to south in front of the garden residence. On the west side of this walk, farther south, in an enclosed square, is situated the Pine ground, backed and fronted with an upright house for Vines, each about 80 feet in length. The house on the north side, called the Pine-ground Vinery, has its north wall mostly concealed by a circular trellis over a walk, covered with Roses, Honeysuckles, Clematises, &c. The house is planted inside, back and front, with Hamburgs in fine condition, intended for use before and about Christmas, and which have received scarcely any assistance from fire except when in bloom. A little fire heat would be given in September and onwards to ripen the fruit thoroughly and prevent anything like damp affecting them. Nearly in a line with this house westward were four lean-to houses all cleared of fruit. The house that is south of the Pine ground is called the Basin-house on account of a basin of water in front, which here interrupts the continuity of the Pear-trellis. It is backed on the north by wide glazed sheds, or greenhouses, very handy for potting, keeping back Pines, and setting plants in for many purposes. The Vine-house itself was planted with a mixture of Muscats, Lady Downes', Hamburgs, &c., and all doing well. Some

Lady Downes' in fruit were patterns of symmetry and colour; and Hamburgs on the back wall were large in bunch and berry, and exceedingly well coloured. We noticed also what we have often noted before, that the bunches concealed from the full glare of the sun by the thickness of a leaf, were rather deeper coloured than those more exposed. Though there was the usual rod in front, 4½ feet in height, with bunches and shoots from it all the way, still there is in these houses a great amount of light that reaches the back wall. I may also mention, that in addition to sulphuring the pipes, the whole of the back wall of this house and some others was well covered with sulphur. A bright sun would be sure to bring out some of the fumes and keep red spider, &c., at bay.

The Pines were looking well, young and old, succession and fruiting. Some fine fruit were ripening, and there were all stages from starting to swelling. There are three ranges, each about 80 feet in length. All are well supplied with hot-water pipes for top and bottom heat, and the former are well supplied with evaporating-pans. The two front houses are pits without any path in them. The back range is a low house, half span or deep hip at back, with wide path under it. This house is 18 feet wide: 12 feet is devoted to the Pine-bed, and 6 to the pathway. The Pine plants as a rule were in pots as being more manageable, and were distinguished for compact sturdiness, and thickness and hardness rather than length of leaves. The path on the floor and the shelves at back were supplied with fine plants of Vines in pots. In other houses and pits across the brook hundreds, nay thousands, of Vines in pots are grown in a superior manner, either for fruiting in pots, when more room is given them, or for planting out, when they are grown more thickly in nursery fashion.

Before leaving this garden we may state that we noticed many heaps of those tarred wooden covers we described at Keele, ready to be used for keeping the wet from the borders of either late or early Vines, &c. Useful at all times, they must be peculiarly so in the general climate of Trentham. Several questions have been sent respecting these covers; and if we answer them wrongly we trust that Mr. Henderson will correct us. 1. Do you use these covers? No, because we do not possess them; but we have recommended them for this purpose, also others for covering pits and frames, as the most economical in the end. We commend our young inquirer for "keeping his eyes open;" but he will generally find it best not to open his mouth too wide, so as not to frighten an employer with too many wants at a time. 2. Are such covers better than tarpaulin, oiled cloth, &c.? Decidedly so, as to economy of cost, and as to economy of labour; for a little litter, a few logs, or a few bricks or pots, will keep them from the ground, and we have known them in use for a dozen years and seemingly nothing the worse. 3. Would you recommend using the boards from the saw or planed before tarring? From the saw, if at all smooth-cut; if to be made nice and painted, plane the wood previously. 4. Are the slips down the joints essential, and what are the best sizes? The slips are essential, and they save all rabbeting of joints. We are not sure as to size; but were we to make covers 4 feet wide and 4 to 5 feet long, we would use boards three-quarters of an inch thick. We would have three cross-pieces underneath, 1 inch thick and from 3½ to 4 inches wide, one at 6 inches from each end, and one in the centre, to fasten the boards to. Along each joint we would then tack a slip of half-inch wood 2 inches wide bevelled at the edges, and then neither heat nor cold would ever make open seams on the top. We would paint all over twice with hot tar, and have it well dried before using the covers.

In this Pine ground and on hard bottoms were mostly collected about two thousand pots of Strawberries, which seemed in excellent condition. Many fine large plants were in large pots; but a great proportion of the plants were in 40-sized pots or in very small 32's, and no doubt these could be used for the earliest forcing, as the buds would be almost matured. R. 1

most extensive of its kind, are justified by the number of entries, which already amount to two hundred.

WORK FOR THE WEEK.

KITCHEN GARDEN.

ALTHOUGH the utility of trenching the ground in kitchen gardens, and bringing up a portion of the subsoil to mix with the surface soil when the latter is said to be worn out with constant cropping, are generally admitted, there are some who are indifferent to its advantages. If the soil should be stiff loam, they are fearful of mixing a small portion of it with the surface soil, although the latter may be like an ash-heap and as rich as dung can make it. We are aware it requires some judgment as to the quantity of subsoil to be brought up, as the texture of the soil may be materially injured by a large quantity at one time; but it can rarely so happen with a small quantity, and as many old gardens would be greatly benefited by the operation, we trust it will receive attention at all favourable opportunities. *Artichokes*, immediate steps to be taken to protect the roots from frost. In some situations this may not be necessary, but it is best to be on the safe side. We have known a whole plantation destroyed by frost, in what was considered to be a very favourable situation, and where it was thought quite unnecessary to protect them. *Cabbages*, all that are sufficiently grown to admit of being earthed-up, should have it done before frost sets in. Red Cabbage for spring use may still be planted. Continue to encourage the planting of crops in every respect as previously directed. Plant out everything in the way of Cabbage or Colewort plants. The Carrots, Beet, &c., being taken up and stored, let the ground they occupied be trenched, and where the soil is of clay or strong loam, let it be ridged that the frost and air may act on as large a surface of it as possible. Ground may now be got ready for new plantations of Asparagus, Sea-kale, and Rhubarb, and as these are what may be termed permanent crops, every care ought to be bestowed on the thorough preparation of the soil for them. The depth to be from 2½ to 3 feet, and thoroughly drained, trenched, manured and pulverised; and where the soil is comparatively exhausted in some of its essential qualities, as nearly all old garden soil is, there ought to be an addition of new loam—for real success in Asparagus-growing this is imperative. Clear away dead leaves from all growing crops, and fill up blanks in them. Take the opportunity of unfavourable weather for out-door operations, to tie-up mats, prepare label-sticks, store up roots, and see that a good supply of covering-materials is at hand when required.

FLOWER GARDEN.

Old-established shrubberies should now be gone over and pruned. We do not mean by pruning that the shrubs should undergo the wholesale denudation of branches and foliage we sometimes see when this operation is performed, but simply the shortening or removal of all dead and straggling branches, taking care to cut in such a manner that the foliage shall conceal the incision made in the branch. Tulip-growers must recollect that people now begin to plant their blooming bulbs. All offsets should be in the ground now, and the main beds had better not be delayed. The *Dahlia*-growers have been puzzled this season. In many places the plants are growing rapidly still. Their growth should be checked by the insertion of a spade or fork under the roots. Continue to examine *Auriculas*, taking off dead leaves, and, above all things, seeing that the plants are well dried and have no drip from the frames. Plant *Anemones* and *Ranunculus* for early flowering; but the choice kinds are not put in till February. Plant *Hyacinths* and early *Tulips*, *Narcissus*, &c., in the open ground.

FRUIT GARDEN.

Continue to prepare for fruit-tree planting, by draining, trenching, and pulverising the soil, and after planting, stake, tie, and mulch them in good time. Clear away all dead leaves from the wall trees, and remove the green fruit from the Figs. The established strong-growing fruit trees that are tardy in producing fruit should be treated according to circumstances. If the trees are planted too deep, or the soil has been raised above or about them since planting, by

all means fork the roots out carefully and plant them again with care on the surface, spreading out the roots regularly, and then mulching them. If trees to be operated on are planted high and dry, fork about them at a reasonable distance, and prune back the main or strongest roots as you discover them. Raspberry plantations to be cleared of the dead canes and superfluous wood, the suckers to be taken off, and where required the strongest to be planted for succession.

GREENHOUSE AND CONSERVATORY.

Damp and mildew are the great enemies to be guarded against now, and these must be sharply looked after, especially in the case of plants that have not well ripened their growth, and are in a rather soft state. If damp is troublesome it must be dispelled by means of free ventilation on dry days, using a little fire heat at the same time, and for mildew a dry airy atmosphere is the best preventive; but the plants should be frequently examined, applying sulphur on the first appearance of the enemy. Very little water will be required here at present, but the plants should be frequently and carefully looked over, so as to make sure that no plant is allowed to feel the want of it. See that there are no broken panes of glass to cause drip, for the dark short days and natural humidity of the atmosphere at this season of the year are quite enough to contend with.

FORCING-PIT.

It will now be necessary to introduce into this structure a supply of those plants usually employed in early forcing; to begin with a gentle bottom heat and a moist state of the atmosphere, admitting a little air on every favourable opportunity. The following plants are available for the purpose:—*Pelargoniums*, *Scarlet Geraniums*, *Heliotropes*, *Aloysia citriodora*, *Alonsoa grandiflora*, *Camellias*, *Coronillas*, *Salvias*, *Cinerarias*, &c.; *Persian Lilacs*, *Sweet Briars*, hardy *Azaleas*, *Kalmias*, *Rhododendrons*, *Lily of the Valley*, *Pinks*, *Roses*, *Violets*, &c.; the bulbs of *Hyacinths*, *Tulips*, *Iris*, *Narcissus*, *Crocus*, &c., that have been potted and treated as advised some time ago. The whole to be managed so as to give a succession of bloom, which can only be effected by bringing into the forcing-pit a part of the stock at a time.

PITS AND FRAMES.

All stores intended to be wintered in these structures should be finally arranged as soon as possible. A dry atmosphere, with a considerable amount of ventilation day and night, are the requisites. An observant person may take a hint from the *Verbenas* which remain out in the borders. How often do we see these green through a great part of the winter. They are well-established, however, at the root, and would prefer a moderately dry frost to a murky and confined atmosphere. Everything that obstructs the light, or that has a tendency to generate decay, should be removed immediately.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WEATHER windy and wet. Did little out of doors, except pulling a few weeds from gravel walks in the intervals of fair weather; cutting the edges and rough cleaning the sides of carriage road, by hoeing and raking when soft, and will rake again the first fine, dry, sunny day, to bring the weeds to the surface, or what is left of them, as at this season, without frequent scratching, hoeing and raking are of no avail. It is only the sides that need anything of this kind, as the centre is too hard and well used to permit of weeds growing. The ground is now getting wet, and we must look out for some stubble, if possible, to finish up our Celery before much frost comes. Made up slight hotbeds for *Radiashes*, and *Asparagus*, but the ground must be a little drier before we can take up the latter. It is a great advantage for early work, when the plants are permanently planted in pigeon-holed pits, to be heated by dung-linnings at the sides; but we have not got that length as yet. For *Asparagus* the pits should have glass sashes in winter, which would come in for other frames or pits in summer. For *Sea-kale* and *Rhubarb*, beard covers would do. Where fermenting material cannot be had, hot-water pipes may run beneath the bed, and one pipe above to keep out frost.

We have grown very fine *Asparagus* in a dark place, by cutting the heads when 6 inches in length, and setting them in damp sand in a vessel exposed to light in the greenhouse, so as to take away the blanched appearance. We prefer, however, what is grown green; and when a part is taken up every year, though the waste is great, the *Asparagus* ground comes in for many crops in rotation. *Sea-kale*, and *Rhubarb*, too, may be grown in the dark as well as not, but neither should be allowed to elongate too much, or the heads and stalks become watery and lose firmness. Earthened-up our third piece of Mushroom-bed, using fresh stiffish loam, kneading and beating it firmly, and making it as smooth on the surface as a plastered wall, by wetting it and drawing a clean spade firmly over it. Put a slight covering of old hay over the shallow bed to prevent the heat escaping. The first piece is now yielding freely, and we gather still from the last piece in the open shed. We have often proved what the last season has also demonstrated, that almost any fermenting material will do for growing Mushrooms when not too wet nor too dry, and when not already permeated by the spawn of other fungi. We have used tree leaves and grass for the bottom of beds, but it is well to give them a good heat at first, as otherwise in raking the leaves you are apt to collect the spores of other fungi with them, which would be destroyed by a sharp heat. The first piece in the shed had been made chiefly with old stubble, brought from protecting Celery, &c., thrown into a heap and fermented, and cased with about 2 inches of dung and horse-droppings. Our first bed in the Mushroom-house was about two parts short litter, two parts horse-droppings, and one part rough dry turf, that had been in a heap for nine months, roughly chopped. On the whole, however, the richer and the less exhausted the materials the better the Mushrooms, and the longer will they bear. We find in our spawn-heap the thin cakes are spawned more quickly and regularly than the thicker bricks or cakes, and, therefore, we mean to make thin cakes in future—that is, say 9 inches in length, 4½ inches wide, and from 1 to 1½ inch in thickness. They are also fit for spawning in half the time.

We feel much obliged for the many kind hints we receive as to these "Doings." Fine clean Celery in winter is a matter of great moment in most families. Clearing away all suckers, tying the heads so as to keep soil out of the heart, and not smothering the heart, are some of the means for securing that object, in conjunction with ashes to keep away worms, and stubble and straw in stiff soils near the top. We have much pleasure, so far as blanching is concerned, in placing before our readers the plan adopted by our friend Mr. McDonald, of Woodstock Park, Ireland, feeling sure he will forgive the liberty we take in making public the following extract from his letter:—

"For several years I have been experimenting with various materials in blanching Celery without using earth. To grow a crop of clean, well-blanching Celery I have always found the most difficult and important work of the kitchen garden. It is a great disappointment, when the Celery is wanted for use, to find that not unfrequently the half of it is useless, or in such a state that it can only be presented in morsels. Of the various materials I have tried, moss has on the whole proved the most satisfactory. Last year it was applied to the early Celery when the plants were nearly full grown, and the results elicited praises alike from kitchen and parlour. This season old fern bracken has been used, which had been in stack for some time, and we have had charmingly clean white Celery of a size that would not disgrace a Manchester show-table. To earth-up Celery properly requires good skill and practice, as, if carelessly done, a large per-centage of the crop will be comparatively useless. Besides guarding against these drawbacks, the plans I have adopted, where moss and fern are plentiful, as they are here, become an important matter in garden economy, as one man will do more than six men in the ordinary way of earthing-up."

We are sure many readers will be obliged to Mr. McDonald for the above plans of blanching Celery—plans which in our estimation, however valuable for early crops, will even be more valuable still for winter and spring crops. Both plans will allow air and water to pass, and keep out light, and thus rotting will be prevented. We once saw bog-earth, such as that with which fuel-peats are made, used for a

similar purpose, the heap going across the garden as the Celery ground did. Many who cannot obtain moss or fern may hit on some other substance somewhat appropriate now when they know how useful such things are. The little moss we can obtain is generally so well supplied with slugs and snails that before using it for anything very particular we generally soak it in hot lime water. We presume, however, that St. Patrick banished all such vermin from Ireland. Certainly some of the finest flower-beds at Woodstock were carpeted with very green moss, and looked as if they had never been touched; whilst when we used such a covering, even for vases, we had the pleasure of seeing the moss all over the walks and lawn in the morning, though pretty well secured too; the birds doing it all before we got out of bed, either in search of slugs and worms, or out of sheer mischief. There are many places where quantities of fern can be had for the cutting. A keen frost will go but a little way into either moss or fern. Much good Celery well earthed-up is often ruined from the frost penetrating the earth. Green Celery will stand a good deal of frost; when blanched it is easily injured, and when the heart is gone the rest is pretty well useless.

FRUIT GARDEN.

Finished clearing Peach-house, watering the borders with hot water, &c., and laid Strawberry plants behind a north wall, and laid pots of others down to prevent excessive drenching. Looked over Grapes and removed any damping berries, and kept a little fire and air on constantly in such showery weather. Protected the border of the late-house with old sashes and straw covers.

ORNAMENTAL GARDENING.

Nearly finished a small stove for the reception of plants, having altered the internal arrangements without altering the heating-pipes, &c. Pruned back the climbers in conservatory, washed all the glass inside and outside, stages, shelves, &c., and nearly finished fresh arranging the house with Azaleas, Camellias, Epacris, Geraniums, Cinerarias, Primulas, &c. The outside of the glass has chiefly been dulled since May, so as to resemble ground glass. Size water with a little turpentine and oil were used, with just about the size of a walnut of whiting in a gallon of the mixture. This was put on the glass rather hot quickly with a brush, and then daubed neatly with a dry brush. We believe this would have stood several years, as it was firm when taken off, but we wanted more light in winter. Choosing one of these damp days the glass was rubbed with a wet cloth, and after a short time the mixture was washed off with another cloth, and water through the syringe or garden-engine. As we do not wish to damp the house unnecessarily, we prefer this kind of shading to be outside. No soap water was used or needed, as if at all strong it is sure to injure outside paint. Gave plenty of air to all sorts of plants in frames and beds by elevating the sashes back and front, but so as to keep the rains out. In some days and nights was obliged to keep all the lights close and wedge them too, the wind was so boisterous, and if an opening were given a whole roof might soon disappear. A little precaution in this way might save much broken glass. The flower garden with wind and wet is fast becoming a wreck. Some fine huge plants of Ricinus have been much broken. Last year they did not do much, but they and Cannas succeeded well this season in small clumps, dug out a yard deep, and filled for 2 feet with hot fermenting material. There is no question that much could be done with bottom heat in the open air, but for the trouble and expense of applying it. Dahlias are still showing. Plants in rooms should now have more water than they need. On the whole, a spare room full of plenty of light and bottom place for reaping bedding. Small plants in cold pits from R. T.

MARKET PRICES.

Supply of fruit and vegetables is very poor. Dutch Grapes and large quantities have come in during the week. Of Potatoes there is a heavy supply, both coastwise and by rail. The kinds of Apples and Pears which are offered remain the same as in previous weeks. Cut flowers principally consist of Roses, Azaleas, Camellias, Chrysanthemums, and Narcissus. The market is a good one for the present.

ance, Violeta, Mignonette, Chinese Primulas, and a few Petunias and Picotees.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....½ sieve	1	6	to	4	Mulberries.....quart	6	0	to	0
Apricots.....doz.	0	0	0	0	Oranges.....100	8	0	12	0
Figs.....doz.	0	0	0	0	Peaches.....doz.	0	0	0	0
Filberts & Nuts 100 lbs.	55	0	75	0	Pears.....bush.	7	0	10	0
Grapes, Hamburgs, lb.	1	6	5	0	dessert.....½ sieve	2	6	5	0
Hambro's, Foreign	0	9	1	6	Pine Apples.....lb.	3	0	0	0
Muscats.....doz.	3	0	6	0	Plums.....½ sieve	0	0	0	0
Lemons.....100	8	0	12	0	Quinces.....doz.	1	0	2	0
Melons.....each	2	6	4	0	Walnuts.....bush.	14	6	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad.....bush.	0	0	0	0	Leeks.....bunch	0	2	0	0
Kidney.....½ sieve	0	0	0	0	Lettuce.....score	2	0	3	0
Beet, red.....doz.	1	0	1	6	Mushrooms.....pottle	1	0	2	0
Broccoli.....bundle	0	9	2	0	Mustd. & Cress, punnet	0	2	0	0
Cabbage.....doz.	0	9	1	3	Onions.....bushel	2	0	4	0
Capicums.....100	1	3	2	0	pickling.....quart	0	6	0	0
Carrots.....bunch	0	6	0	8	Parsley.....bunch	0	3	0	4
Cauliflower.....doz.	2	6	4	0	Parsnips.....doz.	0	6	0	0
Celery.....bundle	1	6	2	0	Peas.....bush.	0	0	0	0
Cucumbers.....doz.	6	0	12	0	Potatoes.....sack	5	0	8	0
pickling.....doz.	0	0	0	0	Radishes doz. bunches	1	6	2	0
Endive.....score	1	3	2	6	Rhubarb.....bundle	0	0	0	0
Fennel.....bunch	0	3	0	0	Savoy.....per doz.	0	9	1	6
Garlic and Shallots, lb.	0	8	0	0	Sea-kale.....basket	3	0	4	0
Gourds & Pumpk., each	0	0	0	0	Spinach.....sieve	1	6	2	0
Herbs.....bunch	0	3	0	0	Tomatoes.....½ sieve	2	6	4	0
Horseradish.....bundle	1	6	4	0	Turnips.....bunch	0	3	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

CONSERVATORY-ROOF (A. B.).—We advise you to follow our own mode of proceeding. We write to two or three parties who advertise the kind of structure we require, describe it to them, and ask for an estimate.

AMMONIA IN HOTHOUSES (Amateur).—You will see on reference to page 326 and elsewhere, that your suggestion has been anticipated.

VINERY BOILER EMPTY IN WINTER (An Old Subscriber).—If the boiler and pipes are entirely emptied of water, neither they nor the Black Hambrogh Vines will sustain any injury however severe may be the winter. If water be left in the pipes some part of them might be burst by the water freezing.

DESTROYING RUSSES—VEGETABLE IVORY (M. C.).—Thoroughly draining the pastures will destroy the Russes, they can only live in a wet soil. We know of no other mode of subduing them, except by constantly uprooting and cutting them down as soon as they appear. Vegetable ivory is the seed of the *Phytolophus macrocarpa*, one of the Screw Pines. It is a native of Peru, and the nuts are imported in such quantities, that not long since one thousand were sold for 7s. 6d. There is an excellent account and two drawings of the plant in the "Botanical Magazine" for 1856. We should sow the seeds at once in sandy loam, covered an inch deep, and place in a stove.

PRIMULAS WITH SHORT FLOWER-STEMS (P. C.).—We fear you are allowing your Primulas to bloom too soon—that is, are the plants are strong. It is a good practice to take the first bloom-buds off, as it strengthens the plants. You are, perhaps, keeping them too cool, and that will cause the stems to be so dwarf. Primulas require a warm greenhouse to flower in in winter, or a house with a temperature seldom lower than 45°. We think additional heat would cause the stems to lengthen.

SLUGS ON CALCULARIAS (Idem).—We never yet knew slugs eat root, nor that they would come near it if they could do otherwise. Examine the plants at night with a lantern, and catch the depredators in the net, and lay some cabbage leaves in the frame at night, which are to be examined in the morning. The slugs will be found on the under side, and if they be swept off into a flower-pot with the hole corked and a little salt sprinkled upon them they will trouble you no more. The leaves will require changing and renewing occasionally.

PRUNING ROSES (A Subscriber, Warwick).—We do not consider autumn pruning a desirable method. February or the beginning of March we consider preferable. You may shorten the shoots to 6 inches in November, or you may prune them in the latter part of that month or beginning of December; but we have found such early pruning result in the death of many of the shoots, particularly when severe weather follows close upon the pruning. Tidiness, always desirable in flower gardens, should never be sought at the expense of the future wellbeing of the plant.

FLOWER-PLANTS FOR THE YEAR.—The following are the plants for the year, as given in "Gardening for the Year."

HEATING A PIT (A Subscriber).—We are very sorry, but we do not think we can add anything more to that which we published at page 319 about your iron tank. We fail now to comprehend your description of the tank raised above the flue, with chambers beneath, &c. A section would have made all clear. We would have preferred the tank being set on the flue, not 3 inches above it, and we think you complicated the affair with your turf and sand above it, and all the rest of it. The simplest way you can manage the tank is to pour hot water into 3 inches at the bottom, have thin slate over that, and then sand or tan to plunge in, and then cover the top with moveable squares of glass. With such means you may strike any sort of cuttings. Why you failed we cannot clearly see, because we do not know the processes you adopted. For all the minutiae of cutting-making, and much besides, see "Window Gardening." By such a mode you may use your present cool greenhouse for the purpose, and your little propagating place will be much handier than any bed or pit out of doors. We have read over carefully your proposal to have a flue through a two-light frame with this iron tank at side and top, and a chamber for steam formed by a slate covering, &c., and the result in our opinion is, that when you heat by such a flue you had better make use of your tanks for something else, as holding clean or manure water, and depend on the flue alone for the heat you require. For instance: you want a good heat for propagating in two lights (it matters not whether frame or pit, though we should prefer the latter), and a more moderate heat in six lights. Well, it would be best to heat the first two lights separately by taking the flue round—say 2 feet or 18 inches from the sides, and shut off from the pit by means of a damper. Move the damper, and the heat would at once pass along the centre of the pit to a second chimney at the farther end, or, but for the expense, it could return and join the back flue in the two lights. With such a contrivance the cheapest plan would be to fill up all round the flues with bricks, stones, flints, &c., so as to be as open as possible, cover the top of the flue and all across with pebbles, and then gravel and sand. The next best would be to make a chamber across with rough slabs of wood, leaving openings between them to be filled with slinkers, stones, &c., and sand or tan above. The next and more expensive mode would be to cover all across with flagstones, slate, or iron; and whichever mode was adopted, there could be no want of heat or moisture by any of the modes frequently alluded to. A pipe communicating with the stones round the flue would always give moist heat enough.

ERRATA.—Page 350, second col., seventh line from top, "heat was not wanted," leave out not. Next paragraph, "fruit wall," should be "front wall." Page 351, first col., seventh line from top, "warm borders" should be "side and end borders." Page 358, first col., sixteenth line from bottom, instead of "ten years," read "two years." To give the same amount of protection from two to three mats would be needed every year, and then the protection would not be equal.—R. F.

BOILERS (Subscriber).—Both your gardener and builder are, to a certain extent, right; but as far as the burning of "anything," is concerned, we prefer the saddle to the tubular form, while for efficient heating and attention in stoking we very much prefer the tubular. At the same time the saddle is also a good boiler in these two latter respects. We would advise you to let your gardener have the saddle if he prefers it, and more particularly if the firing to be used is not of the best description. He will then be more likely to meet your wishes. If your house is for late Grapes—that is, autumn Grapes—and bedding plants in winter, a flow and return four-inch pipe will be enough.

TRUBERGIA (HEXACENTRIS) COCCINIA CULTURE (C. G.).—Keep your plant dry and cool through the winter, and when in spring it begins to grow freely, shift into rich turfy soil and grow on fully exposed to light, and if it does not flower under such circumstances, you may consider you have a shy-flowering plant not worth expending labour on for another year.

REMOVING YUCCAS (F. Newman).—The end of April is a good time for removing Yuccas. Take out a trench round them, and move them with as much soil to their roots as will adhere to them. Water well when planted, and shade from bright sun for a time. They are as easily and as successfully moved as a laurel. It will be best to pot the suckers of the Aloe singly into small pots.

SUPERPHOSPHATE OF LIME TO VINE-BORDERS—FINES PLANTED OUT (F. W.).—You may apply the superphosphate of lime at the rate of 2½ bushels to a rood. The best time to apply it is when the Vines are starting. You should not start your two-year-old Vines, particularly if they are weak, till February. You will succeed very well with your Pines by putting 2 or 3 feet of firmly-trodden Oak or Beech leaves below the soil. They will yield heat more or less for twelve months. We do not like such a mixture as you describe for planting Pines in, and prefer moderately rough loam, with about an eight-inch potful of bone dust, to a barrowload of soil, and afterwards to water with liquid manure.

BORAGE (Nemo).—It is an annual. You would gain nothing by sowing before March. You may plant *Lilium lancifolium* now. The bulbs should not be disturbed oftener than once in four years.

MR. FORTUNE'S PLANTS (Desimo).—If you write to Mr. Standish, Nurseries, Ascot, he will give you the information you seek.

PLANTS FOR AN EASTERN BALCONY (A. F.).—We know of nothing better than masses of *Chrysanthemums*, or *Aucubas*, *Laurustinus*, and *Cypresses* in tubs, with borders of *Snowdrops* and *Crocuses*, with a few *Hellebores*. Where is your balcony, in town or country?

ROSES AND CLEMATIS MONTANA NOT FLOWERING (Leighton B.).—If you had stated more particulars as to the soil and situation in which your Roses grow, and what sort of Roses they are, we would be more likely to hit on the cause of their not flowering. Roses when grown in shady situations, and not sufficiently thinned out with the pruning-knife do not flower freely nor produce fine flowers. When in a good exposure and kept properly thinned of wood Roses seldom fail in flowering if healthy. The same remarks are applicable to the Clematis, it being a remarkably free-flowering plant when grown in an open situation, and particularly on a wall. If they are thick of wood thin well out, and let sun and air to them, and if both Roses and Clematis are healthy they will flower. The planting of Clematis had better be deferred till spring.

PLUMS AND CHERRIES FOR NORTH WALL (Mrs. Burrows, Coven).—Plums: Early Orleans, Drap d'Or, Reine Claude Violette. Cherries: Morello, May Duke. We cannot detect your plant from such a specimen. Send a sprig and some of the fallen flowers in a card-box and a little lamp-moss.

VINES IN POTS (A. Seah).—You cannot do better than keep your Vines in your cold greenhouse all winter, if the temperature does not exceed 40° with fire heat. They will do under the stage in any cool corner of the house. As soon as ever they show signs of swelling their buds in spring train them up under the rafters of your greenhouse, keeping them at least 16 inches from the glass. The pots can stand on the front shelf with which your house is, no doubt, furnished. The sorts are not well adapted for fruiting in a cold greenhouse. Few Vines require so much heat as *Alcornoque*, and both *Lady Downes* and *Black Muscat* require more heat than *Hamburghs*. If you could exchange them with any one for *Hamburghs* the latter would be more satisfactory in a cool house. Of course, if you can keep your greenhouse warm from May till September they will do very well.

ALTERING THE TIME OF FLOWERING IN CAMELLIAS (South Devon).—The time that Camellias flower depends so entirely on the time that they make their young wood and set their buds, that you must let this process take place later in the season than has been the case with yours. To gain your object as quickly as possible, keep your plants as cool as possible all winter and early spring; and, instead of putting them in heat to make their growth and set their buds, keep them in a cool, dry, and somewhat shaded position. This followed out for a year or two will cause your plants to be later in making their growth and setting flower-buds, and as a consequence they will flower later.

TREBIZOND NUT TREE (Leamington).—This is mentioned in the "Gardeners' Year Book for 1893," and our correspondent wishes to know where a plant of it can be purchased.

PATENT STOVES (H. C.).—No such stoves, for they have no chimneys, should be admitted among plants. These are always injured by the fumes from the fuel.

MAKING ASPARAGUS-BEDS—PLANTING SEA-KALE (H. Howell).—The ground should be well drained to the depth of 4 feet, and 21 feet from drain to drain. The ground should then be trenched to the depth of 3 feet, and 6 inches of manure worked in. If the soil be deficient in sand or clay a like quantity of sharp sand or ashes should be added to it and worked in. Divide the ground into beds 5 feet wide, pointing north and south, with two-foot alleys between the beds, and driving a stake down at each corner of the beds. Cover the latter with a layer of well-decomposed dung 3 inches thick, and throw out the alleys equally over the beds to the depth of 1 foot. Fork the beds over and leave them rather rough for the winter. The beds should be prepared this month, taking advantage of dry weather. You will plant three rows of two-year-old plants along the beds, the outer rows 1 foot from the edge of the beds, and the same distance from plant to plant in the rows. We consider *Giant* or *Early Battersea* the best variety to plant. Prepare the ground for the Sea-kale in the same way as for Asparagus, but do not form the ground into beds. Plant in lines 2 feet 6 inches apart, running north and south; three plants together, 1 foot 3 inches asunder in the line, so that they will represent the points of an equilateral triangle thus: " " " and 6 inches from crown to crown. (E. A. F.).—See the above reply to H. Howell as to how to make the beds. We do not recommend planting full-grown plants, as they rarely do any good. Two-year-old plants, and even one-year plants from the seed are better. They should be planted in the beginning of April. Four years is about the time necessary to obtain Asparagus fit for cutting. If the grass be strong, at three years a few heads may be cut; but the strength and time of coming into bearing depends on the liberality of the treatment given, as liquid manure twice weekly in summer.

THE USE OF DAMPERS (A Constant Subscriber).—A little grumbling now and then is vastly superior to continual flattery. We do not like dampers because they confine the smoke and its direful gases in the flue, whilst exposing the fire to a full current of cold air. This confining of the smoke materially aids in bursting flues from the collection of gases in them, which, becoming ignited, explode, because the damper prevents their escape by the chimney. Confining smoke in a flue by means of a damper is just the same as working a steam boiler to the highest pressure its parts are capable of resisting and then shutting the safety valve. If you stop a racehorse at full speed the collision is fiercer than when the animal is walking. So with dampers. The damper checks the draught, but not until the air has attained its full velocity; and do you think that it is not better to prevent the draught by shutting the ash-pit door than to allow it to rush in there, and then by means of a damper to hinder its passing along the flue? Dampers fill flues with smoke, prevent its free passage to the chimney, and if there are any cracks in the flue the smoke thus confined is sure to find them out. Dampers cause an unnecessary strain on all the parts, and this sooner or later ends in a smoky flue. Dampers fill flues with soot, and are always out of repair. If no air can reach the fire—under, through, or over it at the furnace—the fire cannot burn at all. The draught is given at the furnace, and where the cause begins that is the place, and that only, to check or increase it. The furnace-door should be as air-tight as it is possible to make it, for we want no air to enter there to cool the air that rises from the fire; but the admission of the air that gives the draught should be by the ash-pit door, so that the air will pass through the fire and become heated before it passes into the flue. Providing the ash-pit door fits closely and the furnace-door the same, the fire will burn very slowly indeed in a wind; and if they fit quite closely, admitting no air, a strong fire will gradually die out. Let us examine any of the slow-combustion stoves used for warming halls, and what principle are they on? The ash-pit door regulates the draught; the stove is made hotter or colder by shutting or opening it, and not by having a damper to hold back the heated air and fill the room or place with gases and smoke. The parts above the fire should be open at all times to afford a free passage for the smoke to escape by, and the opening below the fire admitting the air can be regulated at will by shutting or opening. We have no difficulty in regulating the draught of our fires, and we never have used a damper; but we have had to work many flues and boilers where they were, yet never did, and never will, use them. We have worked flues that burn a ton of coals per week individually, without any ash-pit door or even a damper, and could have any heat of flue by raking the fire according to the weather. If your ash-pit door is made to fit quite close, and does not then prevent that roasting heat you complain of, we can only say your furnace is too large for its work, and must burn fuel that would be economised by having a less furnace.—G. A.

AIR PIPE (G. Child).—We have it inside the house. No steam ought to escape from it.

GLASS (A. Q.).—It will do very well for your "ground vinery." We have no information relative to ripening Peaches in such a structure.

LEAVING GROUND FOR RHODODENDRONS (M. H.).—Lime will not be detrimental to Rhododendrons after having been incorporated with the soil for two years. We would advise you to defer planting the Potatoes until spring, which would allow of the surface being left rough and the frost pulverising it. The lime could then be applied in March, when the ground would not be so wet as now. Four tons are a good dressing for an acre of land.

PLANTING CLIMBERS (G. H. P.).—We should keep the climbers in pots until spring, and then plant them out in the boxes specially provided for them.

KEEPING DOWN THE HEAT IN A VINERY (A Tyro).—Your pipes may be covered with boards as you propose, and then covered with hair-felted such as is used for covering steam boilers. If you were to have both ends of the trench open so that the heat could pass out, it would not become so hot as if confined exclusively within the trench. By abundant ventilation you may keep your vines cool, and they will be none the worse by not being frozen.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (*H. B.*)—1 looks like a *Microlepia*, but too young to name; 2, *Peris hastata*; 3, *Lastrea Filix-mas*; 4, *L. dilatata*. (*Six Years' Subscriber*).—We cannot name Conifers usually from merely leaved scraps.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CREVE CŒURS.

WE redeem a promise made some time since to one of our correspondents, who asked for some information respecting Crève Cœur, stating he thought such would be of general interest. We are indebted to the excellent French work of M. Jacque for much of our knowledge concerning this breed, the rest being the result of some years' observation and breeding.

The Crève Cœur should be black entirely, but it is difficult to obtain such. In common with all other black fowls, they have a tendency to become particoloured. The cocks get red, yellow, sometimes white, feathers in the topknot, hackle, and saddle, more frequently the two latter. The hens show them principally in the topknot, and they increase with age. A remarkable feature in the Crève Cœur cock is the singular comb, composed of two spirals or spikes, sticking up in front and looking like horns. They are sometimes smooth and wide apart at the ends, sometimes close together, and sometimes very wide apart, throwing out small branches like the horns of a young stag. Add to this, that he has an ample topknot falling backwards, with the exception of a few straggling feathers that come forward, that he is plentifully whiskered, has an ample beard hanging below his wattles, a bright eye, an intelligent face, and a grave look, and you have a truthful description of this singular head. The body is very symmetrical, being deep, square, and well seated on the legs, which are short. It gives the appearance of being what it is, a good table fowl. It is four-clawed, and has blue legs. A cock, being a good specimen of the breed, weighs from 6 lbs. to 7 lbs. The hen has a larger topknot than the cock; it is also rounder, she has very small wattles, but she has a large beard and thick ample whiskers. She also has a square body, and short dark blue or black legs. Weight from 5 lbs. to 6 lbs. There is a latitude allowed by the best French judges in the topknot of these hens, which would not be admitted in Poland in this country. We will on this point quote verbatim from M. Jacque.

Speaking of hens he says:—"The topknot is of variable dimensions, sometimes composed of short feathers falling and turning little over, leaving the eyes plainly visible, sometimes forming such an abundant head-dress that it conceals the head itself almost entirely, and the eyes are of use only to see that which is on the ground. Very small wattles, and small whitish deaf-ears. Good average layers of very large eggs, and non-sitters."

Our own experience enables us to add, that we consider them far more than average layers. We have found them lay as many eggs as the best of our laying breeds, in many instances more, and they have the advantage that their eggs are quite as large or larger than Spanish, with plentiful yolks and most delicate flavour. We have found them easy to rear.

We will conclude with another quotation from M. Jacque. This admirable race certainly produces the most excellent fowls that appear in the French markets. Their bones are very light; their flesh fine, short, and fattening easily.

be put up to fatten at from ten to twelve weeks old, and be eaten a fortnight afterwards. At five months old a fowl of this breed has nearly attained its growth, weight, and quality. At six months, being well fattened, it should weigh 7 lbs., and sometimes attains 9 lbs. The Crève Cœur breed supplies the poulardes and choice chickens sold in the Paris market. It is the first breed in France for delicacy of flesh, for facility of fattening, and precocity. I think in these particulars it is the first in the world."

TONBRIDGE WELLS POULTRY SHOW.

COMING closely on the heels of our correspondent's lamentation that no shows existed in the south or south-east, is the announcement that one took place at Tonbridge Wells on the 23rd of October, in connection with the agricultural meeting held in that town.

As a first attempt it must be considered eminently successful, so far as entries, quality of birds, and attendance were concerned. If it is to be annual, it will be well to make it imperative on all exhibitors to provide proper and convenient baskets for the purpose. They are inexpensive, and always useful in a poultry-yard. When such are used, all that is required of the Committee is to erect stands on which they are placed. Uniformity is gained, and the birds are shown to advantage; while if the pen or cage be left to the option of the owner, it is astonishing what strange devices some of them adopt, from a piano-case, or china-crate, down to a blackbird's cage. Many such were ranged in a spacious tent on the beautiful spot selected for the Show. It was large, but would not contain all. The weather was fortunately all that could be desired, and the pens were ranged out of cover.

Kent is famed of old for *Dorkings*, and maintained her reputation on this occasion. The first prize was taken by Mr. Dolby, who, we believe, has only lately become a Kentish man; second and third by the Rev. Mr. Barnes, who showed excellent birds. Those belonging to the Earl of Abergavenny were also very good. The next class in merit was the *Game*. Mr. Hughes, and Lord Abergavenny, deserved their prizes. *Turkeys* were excellent. So were the *Geese*. There were some cross-bred between *Toulouse* and common, that were most meritorious. The same may be said of *Ducks*, which were well shown, both in classes and as varieties. Mr. Dolby's success was completed by taking the prize for the best collection. He is too good an exhibitor for a young show. He took first for *Dorking*; first for *Silver-pencilled Hamburgs*; second for *Turkeys*; first for *Geese*; first for *Aylesbury Ducks*; first for various *Ducks*. Lord Abergavenny took the second prize for collections. In *Hamburgs*, *Polish*, and *Spanish*, the quality of the birds shown left much to desire.

Mr. Baily was the Judge.

NORTHERN COUNTIES POULTRY SHOW.—The entries for the eleventh annual Exhibition of Poultry at Darlington close on Monday, the 16th inst. The schedule of prizes comprises classes for adults in Black Spanish, Coloured *Dorkings*, White *Dorkings*, Buff *Cochins*. Any other variety of *Cochins*, *Brahma Pootras*, Black and other Red *Game*, Any other variety (*Game*), Gold and Silver-pencilled and Gold and Silver-spangled *Hamburgs*, and *Polands*; while in *Bantams* classes are allotted to Gold or Silver-laced, Black or White, and *Game*. The *Ducks* are *Aylesbury*, *Rouen*, and Any other variety. *Geese* and *Turkeys* have also classes, as well as Any other distinct breed of poultry; and a *Selling Class* is introduced, the price per pen not to exceed 30s. The prizes range from £3 to £1. Pigeons are divided into thirteen lots. In addition to the above, all the principal varieties of poultry have distinct classes for birds of 1888, as well as for pairs of pullets, and in some cases for single cockerels. In several varieties, also, single cocks of any age are included. To add to the interest of the Exhibition, no less than fourteen silver cups, principally presented by friends of the Society, are offered for competition, varying in value from £3 to £5—the winner to have the option of taking the cup or the amount in money. The classes when they are held the first prize will be worth

held; but unless three pens compete in any class the cup or first prize will not be given. Instead of the usual shed, so unweatherproof as it has long proved, the entire collection of feather will be arranged under the new covered market, which, how much soever it may be condemned as blocking up so fine an area for the healthy circulation of air in the heart of the town of Darlington, is yet an admirable accommodation for the Northern Counties Poultry Society.

SELLING POULTRY.

WILL you tell me what is the usual rule in selling poultry? I have often seen it urged in your Journal that one should not send fowls without being paid beforehand; but in several cases when I have asked for a post-office order to be sent before sending off my fowls it has seemed to give great offence, and in some cases has stopped the sale altogether. What ought I to do in dealing with strangers?—L. S. D.

[In dealing with strangers we invariably ask for a reference or for prepayment; and no one who admits the dictates of common sense would object to give either the one or the other. We always say in reply to an intending purchaser if unknown to us, "You will not misunderstand us when we say that we shall be obliged by a reference or, if you prefer it, prepayment; the money to be returned, deducting any expense, if the fowls are not satisfactory." Of course there are purchasers of too-well-known character to require such a precaution.—Eds. J. or H.]

PENS AT THE BIRMINGHAM POULTRY SHOW.

THE very important article in your last Number, in reference to the above subject, is a matter of too much importance to pass unnoticed.

Your correspondent, "OLD COCHIN," asks if it is the intention of the managers of the forthcoming Show to enlarge the pens. The frequent complaints that have been made through the medium of your Journal, and the silence of the managers of the Show in reference to this very important alteration, lead me to conclude that no alterations will be made.

It does indeed appear singularly strange to pooh-pooh at the poultry part of this great Exhibition. No expense is spared in any improvements which can be suggested in the cattle department; and if the trifling expense in enlarging the poultry pens is so economically considered, I would suggest that a subscription be at once raised amongst the exhibitors of poultry to defray the expenses, and that the alterations be at once made. Your correspondent, "OLD COCHIN"—and, being one of that breed myself, I can endorse the truth of his complaints—states only the injury it is to the birds. That is bad enough, it is true; but a greater evil than that exists—that is, the awarding of the prizes. Some very great errors have been made of late years, and particularly in the larger varieties of fowls. I for one most willingly exonerate the Judges, for in some of the pens containing three Cochins if the cock bird should be at the front of the pen, no sight whatever could be gained of the hens, and, doubtless, the Judges at the time have thought it a Single Cock class, and awarded the prize according to his merits only: hence the blunders that have been made in some of the classes. I am quite sure enough has been said upon this important subject; and if exhibitors find upon entering the Show this year that the same evil still exists, I would advise those who possess the large breeds of birds to keep them from Bingley Hall in future, and send them to any other Show in England, and they will find better accommodation for their birds.—A BIG COCHIN.*

STATING THE AGE OF POULTRY EXHIBITED.

I THINK that you would be doing a service to exhibitors of poultry if you would recommend in your pages that the framers of rules should require nothing respecting age, except that chickens should be the produce of the current year. To compel persons to state, a month before a show,

* We have just received information that the pens for Cochin-Chineses and Bantams will be increased in size.—Eds.

exactly the number of months which their birds have been hatched is to ask men to do what they cannot do with accuracy where a large number of birds are reared. Everybody is liable to accident; and if when the schedules are filled up you intend to exhibit cockerel No. 1 and state his age as nearly as you can, it often happens that cockerel No. 2 has to be sent in his place when the show really comes, and this bird is probably of a different brood and a different age to the former. Here is a fertile source of incorrect ages. All that is really necessary is to insure that birds, exhibited in the chicken classes of 1863, have been hatched in 1863, and whether they are seven, or nine, or five months old is of small importance. Every fancier knows, I think, his chickens from his old birds; but, as the season advances, we forget to which brood such and such birds belonged, and, without intending fraud, make misstatements of the exact age of specimens. Besides, the schedules are sent a month before the birds go to a show, and between the times much may occur not only to change original intentions, but also to make us forget the age actually given. We are not all so careful as to keep a copy of the entry.

I trouble you with this letter, because inadvertently I have just exhibited a pen in which the cockerel was at least six weeks older than the pullets, and one age, I see by the printed catalogue, is given for all.

When the form was filled up and sent away, a very promising cockerel of the same brood as the pullets seemed to be the most suitable partner for them. When the day came to despatch the pen he was amiss, and another was substituted. I did not remember what age had been given, and till I read the catalogue a week after the show, I did not know any false statement had been made. Judges know quite enough to make an exact statement of the age unnecessary, and the public are misled and exhibitors embarrassed by attempting too much.—A BLUNDERER.

FORCED SWARMS AND ABORTIVE BROOD.

I FEAR Mr. Lowe must have thrown aside the remarks on which he has afterwards commented, after "a mere cursory glance" only, as he formerly threw aside the opinions of various authors on bee diseases. Doubtless, every one has a right to read or not, as he chooses; but we may reasonably expect that the non-readers will not be our critics. Among several other misquotations, Mr. Lowe puts between inverted commas, "there should be no failures"—speaking of forced swarms. The nearest approach to this occurs in my remarks at page 120, where I say, "There ought to be no such failures," plainly referring to a certain class of failures named in the context. Omitting the word "such" changes the meaning of the whole sentence. It would, indeed, be absurd, under any system of management, to say there should be no failures whatever. Are there not in the land of the mountain and flood some failures of natural swarms, from various causes, at various ages? "Be candid for once." There are a few such in England occasionally, perhaps as many in proportion as there are of forced swarms, when the latter are judiciously made; and who in the name of common sense ever thinks of driving them, "ready, or not ready?" When the honey season has fairly set in, when the population is overflowing, and drones have been reared, they are always ready. A natural swarm is a beautiful and a pleasing sight; but many bee-keepers cannot afford to indulge in the "mystical," or "poetical," at the expense of half their honey harvest, and of valuable time spent in watching and waiting; nor to share with their more affluent comrades a contempt for "mere commonplace considerations of profit and pelf." Is he who prefers natural swarms, even when they lessen his profits, is he really "the true apiarian?"

Mr. Lowe charges us not to repeat that bees will carry out of their hives chilled and abortive brood. Nevertheless, I must and do repeat it. I will give an instance, not the only one I could bring forward, but I select it because a whole hive of chilled brood is an extreme case—one in which foul brood ought to have resulted, if such a result was at all usual. I had placed four forced swarms (made about the middle of June this year) apart from my other bees, in a

wooden house, not originally meant for a bee-house. This place is painted black, is almost air-tight, and when opened on a hot day feels like an oven. I was in the habit of leaving the door open on all sunny days, but going from home unexpectedly on the morning of July 10th, I unfortunately forgot to do so. The hives were full and heavy, though only three weeks old, the day was intensely hot, and when I returned in the evening I found that two heavy combs in the best of the four had collapsed, drowning a good many bees, and covering the floor with honey. Next morning I observed that the bees, in despair of putting things right, were joining themselves to the colonies on each side of them, and at night I took away their deserted tenement. Being much occupied with other matters, I could not attend to it further till the 14th, three days after its former occupants had left. I then took away the collapsed combs, put a couple of empty ones in their places, inserted a spare royal cell, already sealed over, and set it in a place till then occupied by two other stocks, removing the latter to some little distance. The returning bees entered, licked up the spilled honey, and applied themselves to raise a queen. I examined it frequently afterwards, and from the entire absence of young bees in the population given to it, I can positively say that the most advanced of its brood came to maturity, as did also the eggs. The rest, by far the greater part, perished, and were carried out by the bees, very gradually. Some remained in the cells till shrivelled up to a mere skin, but were ultimately removed when the colony got stronger.—JOHN P. EDWARDS, *Shirleywich, near Stafford.*

AN EXPERIMENTAL APIARY.

My design in writing the article titled as above was for good, to condemn all ill-timed and wrong-directed artificial processes and malpractices of whatever kind, and by whomsoever committed. I did not, therefore, anticipate such a wrathful outburst as has fallen upon it from Exeter, inasmuch as my subject matter was so discursive and general in its character. In any reference which I did make to Mr. Woodbury's writings, I have not knowingly or otherwise misrepresented or misquoted his views upon any subject, and I repel any such ungenerous insinuations.

I am reminded by Mr. Woodbury, however, that I have committed two errors. The first in reference to my having on a former occasion attributed to him the following expression, which is so trifling, as but for the remarks made upon it I should not have thought it necessary to notice it. I inadvertently said, "what he calls (for what is called) the great centre of bee knowledge." The other is with reference to the length of time Dzierzon recommends that a foul-brood-infected hive should remain unoccupied. I am reminded that he recommends an exposure to the sun and air for two years, and not four, as stated by me. I made no quotation, and simply wrote in this case from memory; but I need not say that I had no intention or motive to misstate matters, for the absurdity of recommending a cleansed empty hive to remain for two whole years exposed to sun and air before being re-occupied, would give as much point to the question parenthetically put by me, as if altered thus—"Would not one year and a half do?" The absurdity of the proposed period of two years could, I think, scarcely be increased by any extension of time.

Let me ask who amongst us would adopt such a recommendation? far less what Dzierzon calls the best course, "to destroy immediately by means of sulphur every stock in which foul brood is found to exist," or another opinion indorsed by Mr. Woodbury at page 97, "that except under very special circumstances it is inadvisable to attempt the cure of a foul-breeding stock; better far to consign its inhabitants to the brimstone-pit, the hive itself if a straw one to the flames, the comb to the melting-pot, and appropriate the honey to any purpose except that of feeding bees." Let those that have a mind take this advice, I for one should not do so.

In regard to the comb introduced by Mr. Woodbury into his hive containing a "mass of chilled and abortive brood in all stages," with such results I make no comment further than to say that every one by the means of testing both the best ability and the best of the bees.

order that no erroneous conclusion may be drawn from the results, I should recommend old comb to be used instead of new.—J. LOWE.

[Absence from home prevented Mr. Lowe sending the above until just too late for our last Tuesday's Journal. We think that these pen-encounters may now cease. Mr. Lowe, we are sure, did not intend to ridicule any bee-keeper who in the true spirit of a searcher after truth, "asks questions of Nature," and accepts her answers. Mr. Lowe's design, as he says above, was "for good," and not to hurt any man's feelings. He certainly did express himself in a way that admits of painful interpretation, though we believe unintentionally. Here let the controversy close, and let all the belligerents read as an epilogue the following note from a clergyman and fellow apiarian:—

"Hold hard, gentlemen! No stinging, please. Pray, Mr. Editor, blow a few puffs of smoke into Devonshire and Edinburgh, if you have a pipe or calumet long enough, and make those sharp sounds we all in our avocations dislike to listen to subside into that lovely buzz of harmony, so pleasant to the ear of every bee-keeper when engaged in the union of those whose welfare thereby they seek to promote. What will become of us if we all get together by the ears? Permit me in all kindness to say, 'Do not smile so hard, brother Edinburgh.' 'Do not heed a rap or two on your sides, brother Devon; you are not obligated to go (like those bees of mine you taught me to drive the other day) whithersoever the rapper listeth.'"

"Mr. Editor, gentlemen, readers, and all whom it may concern, excuse a short paraphrase on the speech of a well-known peacemaker, the Host of Windsor, and whilst I utter it I feel I shall have many to join in the hum. 'Shall we lose our doctor, our learned teacher? Shall we lose our clerk, our practical writer? Forbid it Heaven. Hold out thine hand, celestial; hold out thine hand, terrestrial. Boys of art, mayhap you both are right, mayhap you both are wrong; but I can deceive neither of you if I prevail to let peace be the issue. Follow me, lads of peace. 'Tis my vocation to lead, not drive, although I am—A HAMPSHIRE BEE-KEEPER.'"

FOUL BROOD.

THE attention of bee-keepers has been of late led in a novel direction, and a new kind of infection in a hive, as it would seem to be, is exercising the ingenious speculations of some of your correspondents in relation to it—not always, I am sorry to observe, conducted in the spirit befitting differing doctors. Marvellous does it seem that practical men and authors, such as De Gelieu, Payne, Bevan, Taylor, Golding, and others, of half a century's experience, and even upwards I believe, should be ignorant or totally silent respecting a contagious malady now creating a mighty sensation in the apiarian community. I trust the outpourings of wrath will descend lightly on my head if I venture to inquire whether any part of the evil can possibly be traced to the exotic bees of late years introduced into our apiaries. I give no opinion, knowing only what I read in your columns; but a communication in your last Number, from the pen of Mr. George Fox, opened to my mind a question, How far the altered and diseased state of his hive can be traced to the introduction of a Ligurian queen in the last spring, as detailed by him. Her majesty's fertile powers, and, as I think, the previous health of the hive, are demonstrated by the fact of her filling "eight combs with brood in a short space of time." Subsequently it was discovered that each comb was one mass of foul brood.

I should be sorry to cast any stigma on royalty; but my limited continental experience suggests the wish, that some better-informed correspondent would direct his attention to the inquiry whether the disease (in Germany for instance) has prevailed most in the native or among the Ligurian bees, of late years so largely imported there. Also, how far it is prevalent in their own alpine and Italian localities, and what may have been the effect of changed climate, or of hybridous operation.

I have somewhere read that a very fertile queen will occasionally be met with as depositing her eggs in the cells, so that the larva is turned bottom upwards, and thus unable to extricate themselves.

Feul must be a hive thus circumstanced. Has microscopic observation, in any of the recent instances of putrid brood, been resorted to?—INQUIRER.

LIGURIAN BEES IN EDINBURGH.

In giving my experience of the Ligurians, it will be necessary to begin at the beginning. I received a Ligurian stock from "A DEVONSHIRE BEE-KEEPER" at the end of April, 1862. The hive arrived all safe, without the loss of a single bee. It appeared to be in a sound healthy state, but by no means strong. The bees commenced operations immediately on being released, but showed an inclination to quarrel among themselves. Next day there was a good deal of fighting, and there was no difficulty in being convinced that this was a domestic quarrel, because strangers could have been easily recognised. I have never been able to account for this singular conduct; but in a few days they appeared to have settled their differences and set steadily to work, but without much appearance of progress till about the end of May, when they began to increase so rapidly that, from being apparently the weakest, they soon became evidently the strongest in an apiary consisting of eight or nine other hives of ordinary bees.

In the beginning of June they threw a fine swarm, and, after the usual interregnum, another. Under ordinary circumstances this is considered the maximum number of swarms in this quarter; but the summer of 1862 was so backward and unfavourable that there was only one swarm of black bees from my apiary during the whole season. I was, therefore, very well pleased with what the Ligurians had done, and was much surprised, a few weeks after the advent of the second swarm, on being told a swarm of bees, supposed to be mine, had been found in a neighbour's orchard. On examining I found them to be Ligurians, which fully established my ownership to them. They were evidently a third swarm from my stock, which had left the hive unobserved. They had established themselves in the forked branch of a Pear tree and had constructed two large combs, which were ingeniously fastened to the under side of the branch. No time was lost in securing them; but so effectually had they secured the combs to the branch, using several of the surrounding leaves as stays, by attaching and working them into the edges of the combs, that they could not be kept entire. The bees were put into an empty hive, and the combs were found on examination to contain both honey and eggs.

After such a successful commencement with my Ligurian stock, I was chagrined to find, a few weeks afterwards, that all the young queens had turned out hybrids. I was not then aware of the risk of hybridising. There were eight or nine stocks of ordinary bees close beside them, and to this I attributed the evident deterioration of the young bees. The first swarm with the old queen appeared to keep quite right, the young bees being as well marked apparently as the old. I will, therefore, confine myself to its history.

Early in the spring of the present year, on looking over my stocks I found the hive in question very weak and requiring some feeding. It improved rapidly after March, and by the middle of April a distinctly audible hum was heard from it at a few yards distance. They occupied a Faylor's hive of eight bars: it is larger than the ordinary straw hive.

On the 15th of May, the day being cold and showery, they swarmed but never settled, and went back to the hive after a short time, but I fear lost their queen in the attempt.

On Saturday, the 23rd of May, they swarmed again, this time successfully, the day being more propitious; and the swarm, a fine one, was secured.

On Wednesday, the 27th of May, the second swarm made an unsuccessful attempt.

On Thursday, the 28th, they tried again successfully. It was a fair swarm.

On Saturday, the 30th, a third good swarm issued, and was secured; but they had settled in a hedge and could not be got into the hive easily, and were not, therefore, moved to their permanent position till the evening. A dead queen was found on the floor-board when putting them in position in the evening; and, as there had been some difficulty in

hiving, I was afraid the queen had been crushed, although the state of the bees in a compact cluster did not indicate this, and subsequent inquiries showed there had been two queens.

On Sunday, the 31st of May, the fourth and last small swarm issued, and was secured. Next morning two dead queens were found before the hive, showing they had finished swarming.

Here, then, were four swarms from one hive within eight days, and before the end of May—a result quite unprecedented in this quarter. These have all done well considering the season. Two of them I sent in August, along with a number of other hives, to the moors. The weather was very unfavourable during the greater part of the time. On returning I took a super from each, the one weighing 10 lbs., the other 11 lbs.; the hives weighing, without the supers, fully 40 lbs. Some strong hives of black bees have done as well as this, or nearly; but the greater number have not done nearly so well. With results like these I cannot hesitate to maintain the superiority of Ligurians over ordinary bees. I regret, however, to find that they are all deteriorated in colour and marking, including the first swarm, which should have contained the old queen; and this confirms my impression that the old queen was lost in the first attempt to swarm. I took every precaution this season to separate them from the black bees. I removed all my own in May to a distance of several miles, and the nearest hives were nearly a mile distant; but, notwithstanding all these precautions, they appear to have been hybridised. The young bees are not so light in colour and have the yellow bands less distinctly marked than the old. Whether they will lose the prolific and industrial qualifications which have distinguished them this season remains to be seen.—J. B.

"B. & W.'s APIARY, 1863.

(Continued from page 444, Vol. IV.)

YOUR apiarian readers may like to know how it has fared with my bees since I last wrote, both as regards the honey harvest, and my endeavour to Italianise my apiary. I will observe, first of all, that I have no further evidence to prove that any of my drone-breeding queens have been of the least use whatsoever. Again and again have the bees reared artificial queens out of Italian brood, but although there were plenty of drones, the offspring of these drone-breeders, the young queens, turned out drone-breeders one after the other to my great disappointment. Your readers already know how completely baffled I was all the early part of the year, my various hives being one and all greatly weakened of course, as I made each in turn supply a population to rear my artificial queens.

If your readers will turn to page 444, they will see that I had then three young well-marked Italian queens, sisters of the same age, at the head of three of my stocks. I am happy to say that two of them have done well, that which led off the virgin swarm from A and was hived in G, and that which I gave to F. Both these young queens have raised a family, amongst which are many well-marked Italians, especially the queen of F, which has proved a very prolific mother. But the queen of A somehow or other came to grief. I saw her in the hive two or three days after the swarm left, but she was probably defective, or else she never returned home safely from her matrimonial flight.

On the 25th of June, therefore, finding neither queen nor brood in this hive, which was evidently dwindling away, I drove the bees all out, and subsequently returned their box to them with four combs in it full of brood (worker and drone), taken out of my Italian stock C. The same day I also drove B, destroying its young English queen, and gave them C's box with the remainder of the Italian brood. The Italian queen of C and her subjects, thus turned out of their home for the third or fourth time, were put in possession of B, with all its treasure of honey and English brood. Surely now, thought I, my perseverance will be rewarded at last. It was now, and continued for many weeks, magnificent weather in the very prime of the season; yet no, again was I disappointed. True I saw two young queens perambulating the combs in A on the 7th of July, and

on the 11th a beautiful young queen in B, but nothing came of them. Italian drones were seen playing in and out of both hives on the 21st and 22nd of August, a sure sign that matters were unprosperous with them. Determined not to be beaten, I once more, August 24th, repeated the operation before detailed, by which the Italian queen and bees of C were driven out of their hive, and deprived of all their brood, another box full of honey and English brood being given to them. As before, the Italian brood was divided between A and B. At first I doubted if anything would come of it, for it was not till the 29th that the bees of A attempted to repair their loss; on that day, however, I saw a royal cell founded, out of which issued a young queen (not very well marked) on the 7th of September. And on the 12th of October, but not till then, I had the pleasure of seeing drone-killing going on vigorously in A, while a few pollen-laden bees were seen to enter it, and a good many in B also, these being the only pollen-gathering hives in my apiary. I venture to hope, therefore, that so far all is well, and that I have at length succeeded in rearing four pure Italian queens, and establishing them at the head of so many promising colonies. I need not detail the other operations of the season, which could hardly interest your readers. I will only revise my hive list, which now stands as follows:—

A. Pure Italian queen, sister to B's queen. Born in Sept., 1868.	B. Pure Italian queen, sister to A's queen. Born in Sept., 1868.	C. Pure Italian queen. Born in 1862. Sent me by Mr. Woodbury.
D. Hybrid Italian queen. Born 1861.	E. English queen. Born 1863.	F. Pure Italian queen, sister to G's queen. Born June, 1863.
G. Pure Italian queen, sister to F's queen. Born June, 1863.	H. English queen. Born 1863. (In garden.)	I. English queen. (Straw hive.) Born 1861. (In garden.)

All these hives are more or less strong in bees; two or three of them must be fed shortly or in spring, the rest are heavy.

And now what as to my honey harvest? Colonel Newman and Mr. Lowe will not expect much from an experimental apiary so harassed and tortured as mine has been. Nevertheless I obtained the following top-honey of the most beautiful purity, without a single particle of brood or bee bread in it; 8 lbs. 4 ozs. from C, the Italian stock; 17 lbs. 9 ozs. from D, the hybrid Italian; 22 lbs. 1 oz. from E; and 8 lbs. 2 ozs. from I; the greater part of which has been sold at 1s. 6d. per lb. Besides this I broke up a straw hive from which 9 lbs. of the purest comb was taken in a cap, and about as much of good but somewhat inferior honey from the hive itself, in all 74 lbs. nett. I do not think I have reason to complain on a review of the experiences of the season, although it must be admitted that I have had enough of disappointment too. In another paper I shall have some further comments to make on the experiences of the season.—B. & W.

THE BEE SEASON IN NORTHUMBERLAND.

HAVING read the announcement of a very good honey harvest this year in the south, it may be interesting to your readers to know that here (in Northumberland) it has not realised the expectations which the warm dry summer made us entertain. The bees certainly did better during the summer than they have been known to do for many years. The hives mostly went up to the moors very heavy, and from that cause lamentable was the account of hives broken down in their journey. Some cottagers took off tops, before they sent the hives to the moors, weighing between 40 lbs. and 30 lbs.—a prosperity almost unheard of here, as our chief harvest is gathered from the heather. We cannot rival the supers of 50 lbs. or 112 lbs., mentioned by our correspondent, Mr. Fox, of Eborac; but the result of the bees' journey to the moors was not unsatisfactory. I can hear of any hive which weighed more than a pound as in weight, and that on a guess-work. The general complaint is that they were much lighter than they went. The wind, and the weather set in about the middle of the season, and the bees were not able to fly.

they had only three or four good working days during their sojourn on the hills. However, the good summer has made them all "keepers," as the term is here, and we must live in hopes of a better autumn season next year to revive the stocks and the spirits of the Northumberland bee-keepers, now suffering under a fourth bad year.

Can any of your readers inform me whether *Melilotus leucantha* is so favourite a flower with the bees as Mr. Wood and Mr. Westwood in their little works on bees assert? I have sown a quarter of an acre with it. It flowers luxuriantly and long, for it is still in flower, but the bees do not work on it nearly so much as on borage.—W. C. ELLIS, *Bothal*.

HOW ITALIAN QUEENS ARE SOMETIMES LOST.

ITALIAN queens are sometimes lost soon after they have been introduced to colonies of black bees.

When a queen is caged before her introduction to a strong colony, queen-cells are usually commenced, and sometimes are not destroyed after she is liberated, the bees swarming out with the Italian queen, and leaving a part of their number to take care of their old home. This is not an uncommon occurrence in strong stocks during the swarming season, and it sometimes occurs after all natural swarming is over.

On the 13th of August I destroyed a number of queen-cells, after an Italian queen had been liberated and accepted by a strong colony of bees. On the 20th a swarm issued with the Italian queen, and I found two more sealed queens, but not an egg in the combs.

On the 17th I removed an old queen from a very strong colony, giving them a caged queen, which was liberated in forty-eight hours. On the 21st, finding many queen-cells and no eggs, and not being able to see the queen, I concluded that she was lost. Making a more careful examination on the 24th I saw the queen, and removed twelve royal cells; there were no eggs in the hive. I have not made sufficient observations to determine whether queens, under such circumstances, generally decline to lay eggs. Thirty-eight hours after the removal of the royal cells above-mentioned, I found that the queen had laid a large number of eggs.—L. L. LANGSTROTH, *Oxford, Butler Co., Ohio*, (in *Prairie Farmer*.)

OUR LETTER BOX.

MANCHESTER POULTRY SHOW (*A. Yorkshireman*).—We differ from you entirely. We consider the prize list very liberal; but we deprecate the Show being held on days which include Christmas-day.

BOOBY HENS (*J. W. C. Halifax*).—There is no method of preventing hens from sitting. The desire to do so comes naturally when they have done laying. It is nature's rest, and although they may be prevented from sitting, they will not lay any the sooner. Drive them about constantly with the other fowls, do not let them get in any corner. If they show a desire to sit in any particular place shut them out of it, and keep them on the move.

ISABEL PIGEONS (*Columba*).—I do not know any variety of Pigeon by this name. On the continent Isabel is used to designate a pale buff or yellowish-cream colour. I believe, however, that some Pigeons have lately been exhibited under this title. As such, perhaps, some breeders of them will say what are their points.—B. P. BRENT.

SKELETONISING LEAVES (*Langholme*).—A work was published in America on this subject, with the taking title of "The Fairy Bouquet," but it is worthless and gives no available directions for skeletonising. We know of no other publication on the subject.

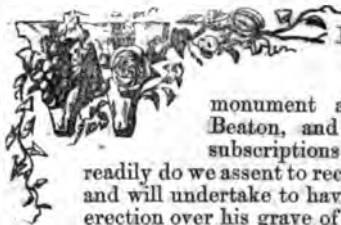
MOVING HIVES (*T. B. Robson*).—We do not deem it necessary or even advisable in this climate to remove bees from their ordinary stands and shut them up during winter. If, notwithstanding this, you decide on trying the experiment, the removal should take place before very severe weather sets in, and the confinement terminate as soon as frost and snow have disappeared. In America Mr. Quinby appears to have carried out this mode of wintering bees to the fullest extent. He inverts ordinary hives and removes the top-boards from those having either bars or frames, not confining the bees to their hives, but trusting to perfect darkness to prevent their straying. In this way he boasts of having kept bees unharmed during five months. For several years he made use of a small bedroom in which he put about a hundred stocks. He describes it as being lathed and plastered, but with no aperture for air except what was admitted through the floor, which was single and laid rather close, though not matched. In 1849 he built a room without any windows for this especial purpose, 16 feet square and 7 feet high. A good coat of plaster was put on the inside, and a space of 4 inches between the ceiling and laths was filled with sawdust. Under the floor was a passage for the admission of air from the north, and another overhead for its exit, which could be closed or opened at pleasure. This room was divided by a partition near the centre in order to prevent disturbing the whole by the admission of light when removing the stocks in spring, and the hives were arranged in tiers one above the other as moveable shelves.

WEEKLY CALENDAR.

Day of M th	Day of Week	NOVEMBER 17—23, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Mean Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
17	Tu	Wax Chatterer seen.	47.4	33.9	40.7	17	23 af 7	7 af 4	26 0	1 11	6	14 54	321
18	W	J. Camerarius born, 1665. Bot.	47.6	33.3	40.4	19	25 7	6 4	32 0	morn.	7	14 42	322
19	Th	Grey Wagtail comes.	48.5	33.8	41.1	16	27 7	5 4	15 1	17 0	8	14 29	323
20	F	Sun's declin. 19° 40' s.	48.7	35.0	41.9	13	28 7	3 4	38 1	34 1	9	14 15	324
21	S	CROWN PRINCESS PRUSSIA B. 1840.	49.3	36.8	43.0	22	30 7	2 4	1 2	48 2	10	14 0	325
22	Sun	25 SUNDAY AFTER TRINITY.	48.9	34.5	41.7	20	32 7	1 4	26 2	3 4	11	13 45	326
23	M	Oak leafless.	47.1	34.4	40.8	15	33 7	0 4	56 2	13 5	12	13 28	327

From observations taken near London during the last thirty-six years, the average day temperature of the week is 48.2°, and its night temperature 34.5°. The greatest heat was 59°, on the 20th, 1844, and 21st, 1833; and the lowest cold, 9°, on the 23rd, 1858. The greatest fall of rain was 0.87 inch.

MEMORIAL OF MR. DONALD BEATON.



E have received several letters inquiring if it is intended to erect any monument as a memorial of Mr. Beaton, and asking us to receive subscriptions for that purpose. Most readily do we assent to receive such contributions, and will undertake to have them expended in the erection over his grave of such a solid yet simple record as the fund may justify.

Most gratifying is it to us, as it must be to all Mr. Beaton's friends and admirers, to find how generally and how highly appreciated he was by those best qualified to estimate his worth, both as a private and public character. The metropolitan and provincial press coincide in details of his high merits, and in expressions of regret for his loss.

LIFTING THE ROOTS OF VINES, AND RENEWING THE BORDER.

WHEN this operation is commenced, its completion should be accomplished with as little delay as possible. It is, therefore, necessary to have in readiness, before the old border is interfered with, the amount of material that shall be needed for drainage and for the formation of the new border. When the subsoil is clay, it is always advisable to concrete the bottom before the draining material is laid on, and gravel and lime should be included in the mixture. A main drain should run parallel with and at the extreme front of the border, and cross drains from the front of the viney should run into the main drain at intervals of 6 feet, and, of course, a good outlet should be secured for the whole. Four-inch-tile drains will be sufficient. These, with as many brickbats or small stones as will form a layer 1 foot deep all over the bottom, and a few barrowloads of coarse gravel with the sand sifted out of it to blend with the brickbats or stones, will be all that is required for the formation of the site on which the border is to rest.

The border itself, to be what is considered of first-rate quality, should consist of friable turfy loam taken from an old pasture to the depth of 4 inches, herbage included. To eight cartloads of loam add two of mortar rubbish, one of horse-droppings, and 4 cwt. of inch bones. As our correspondent, "C. V.," has charcoal at command, he may substitute it for the mortar rubbish, or a cartload of each may be added instead of the two of mortar alone. The loam should be chopped up with a spade, and the whole thoroughly mixed together and protected from rain in a place close at hand till it be required.

Though such a compost as this is recommended, I am far from desiring to lead the inexperienced to suppose that Grape-growing is not to be attempted, or that the roots of Vines are to be left undisturbed in cold, wet borders till they can command such a border to the very letter as has been described. The nearer they approach

to it, however, the better. If, for instance, the loam at command is heavier than that which deserves the name of friable or turfy, then more mortar rubbish or charcoal, or both, should be applied; and when the two latter cannot be had, a third of the soil itself may be charred, or even burned, an expedient which I have frequently had to adopt myself. Even where nothing in the shape of turf from an old pasture can be had, very good Grapes can be grown with moderately light common garden soil having the same amount of the other ingredients mixed with it, or more or less of them, just in proportion as the soil is stiff and likely to become consolidated, or the reverse. Any composition that is free and open, and moderately enriched with manure, produces very good Grapes, and no discouragement should be thrown in the way of any one who can form his border of such, when that which is considered best cannot be more closely imitated. An amateur friend near here has done wonders with a border of little more than black sand close to the sea. Too much water about the roots was next to impossible, from the nature of the soil, and the secret of his success lay mainly in rich top-dressings.

Supposing, then, that the time for lifting the Vines has arrived, which, as has already been stated, in the case of Vines that can be cleared of their crop before they become dormant, is early in autumn. But when the reverse of this is the case, and the crop is a late one, the operation is to be performed in spring in preference to winter. In as far as the operation of lifting the roots is concerned, the time of doing it makes no difference, although in several points the after-treatment required at the different seasons varies considerably, and will, therefore, be separately referred to.

The first thing that must be done is to remove the whole of the inert surface soil down to the roots of the Vines. Then a trench should be taken out along the front of the border deep enough to be below the roots. The removal of the whole soil should then be effected with as little injury to the roots as possible. Every rootlet that can be saved will contribute its own share towards the success that is to follow. After the trench is opened, the soil must be gradually and carefully worked away from the face, and the trench should be constantly cleared of the loose soil. There are no better tools for this purpose than a four-pronged steel fork, and a sharp-pointed piece of hardwood stake. Any attempt that may be made to hurry forward such an operation as this is sure to be attended with a corresponding injury to the roots. No large slices of the border must be taken off at a time, but it must be gradually picked, forked, and crumbled away. Yet the operation should be completed as quickly as it can be done, so that the roots should be as short a time as possible out of the ground. Therefore, as many hands as can work without being in each other's way should be employed.

As soon as the roots are all liberated, they should be covered up carefully with damp moss and mats, to prevent their suffering from the weather, till the new border is ready for them.

The bottom or site for the border should be gradually sloped off from the front of the vinery to the extreme front of the border, where the main drain is to be laid, and if practicable give it a fall of 1 foot in 12. When it is necessary from the bad subsoil to concrete the bottom, in a case of this sort I have, for the sake of getting on quickly with the work, formed a firm surface for the drainage to rest on, by first putting a layer of stone of the size of the road metal over the surface, and beating it into the clay, and then placing another layer somewhat thicker over this, and blinding the whole up with concrete. This at once gives a bottom on which tiles and brickbats can be laid without tearing up the fresh-laid concrete. The tiles and drainage being all adjusted as already described, put a layer of thin turf over the whole, with the grass downwards, if such can be had; if not, a thin layer of straw, or the roughest part of the soil. While the drainage is being completed, I would advise that upright pipes be fixed close to the front wall of the vinery, and connected with the tile drains in the bottom, and a similar series of funnels along the front in connection with the main drain. This will in hot weather give the power of admitting a circulation of air beneath the border, and the pipes can be plugged up at night. In cases where the border extends inside the vinery, the one set of air-holes should, of course, be inside the house, when the circulation of air will be more effectual from the difference of temperature.

The new soil should be laid on in layers, and rather firmly beaten down with a closely-pronged fork to prevent its subsiding much and dragging down the roots of the Vines. When filled up to within 10 inches or a foot of the desired level, the roots of the Vines should be disentangled and carefully and regularly spread out over it. Immediately over them place a thin layer of the finest of the soil, and then fill up with it, just as it comes, to the level, which should always be a little higher than is ultimately desired, to allow for subsiding, but never cover the roots deeper than 10 or 12 inches.

The depth of border should be at front of vinery 2 feet 9 inches, sloping off to 2 feet at the extremity of the border.

Vines that are thus lifted and replanted by the middle of September, when they are still in leaf, and the temperature of the soil still high, should have the new border snugly covered up with a foot deep of some nonconducting material, such as fern, straw, or leaves, with a covering over all of wooden shutters or straw, to completely protect it from rain. This will prevent the radiation of heat, and protect the young rootlets made in autumn from wet in winter. Immediately, or even before the Vines are lifted, a shading of some thin material, such as tiffany, should be fixed on the roof of the vinery, to keep the leaves from being exposed to the full sun. The house should be kept close and moist, to prevent as much as possible the leaves from flagging. Generally, some of the oldest leaves drop off, but with attentive management in the matter of keeping the atmosphere moist and rather close, root-action soon commences, and the laterals will make fresh growth, which should be encouraged for a few weeks. After the Vines have recovered the shock the shading should be removed, the atmospheric moisture reduced, and more air admitted. Should the weather be cold, as it often is about the end of September and beginning of October, fire heat should be applied, particularly during cold nights.

Vines requiring such radical treatment as this are generally not well ripened; and if a crop is expected next season, and for the improvement of the constitution of the Vines, the heat should be applied with a regular but not violent circulation of air throughout October, to ripen the wood, which object for the present is next in importance to getting the Vines to make fresh roots in their new bed of earth.

In spring, and just as the Vines begin to swell their buds without fire heat, a bed of warm leaves, or leaves and stable-dung mixed together, should be placed over the surface of the border in place of the winter covering put on in autumn. It will throw a little heat into the border and assist the progress of the Vines very much. The Vines should be kept close and moist, to prevent as much as possible the leaves from flagging. Generally, some of the oldest leaves drop off, but with attentive management in the matter of keeping the atmosphere moist and rather close, root-action soon commences, and the laterals will make fresh growth, which should be encouraged for a few weeks. After the Vines have recovered the shock the shading should be removed, the atmospheric moisture reduced, and more air admitted. Should the weather be cold, as it often is about the end of September and beginning of October, fire heat should be applied, particularly during cold nights.

material should be applied immediately the work is done. The Vines should be slung down further from the glass than in ordinary cases; and instead of forcing them on allow them, so to speak, to feel their way. They must be expected to break more weakly than usual; and in order to assist the young growths to support themselves till the roots are brought fairly into play, a moist atmosphere must be kept up, particularly during bright weather, and they will soon establish themselves, and bear a moderate crop of fruit. The bed of leaves should not be removed from the border till mid-summer, and then a slight mulching of dung should be substituted. Where leaves cannot be procured, as is the case with many amateurs, a load or two of stable-manure will answer the purpose; and wherever that is not attainable the next best thing to do is to cover the border with something that will prevent chilling winds and rains from influencing it.

In all other matters in the routine of culture, our correspondents must consult works on the subject, and it is to be hoped that what has been said will be of service to them, and others similarly situated, who have not had experience in lifting the roots of Vines.

D. THOMSON.

THE CHRYSANTHEMUM SHOW AT THE AGRICULTURAL HALL.

This took place on Wednesday, Thursday, and Friday, last, and considering that it entirely owed its existence to the exertions of the growers, both amateur and professional, in the immediate neighbourhood of Islington, it must be regarded as a very successful beginning. Not only were the plants fine examples of culture, but the cut blooms, both as regards size and form, reflected the greatest credit on the growers. Some little confusion, no doubt, existed at first, though not more than could have been expected in classifying and arranging so vast a body of materials as poured in; but through the active exertions of Mr. Jeffries, the painstaking Secretary of the Amalgamated Society, all was soon brought into order.

Although it could have been wished that the Exhibition had been spread over a less extent, still the effect of the display of specimen plants occupying the body of the Hall, was excellent, especially when seen by gaslight. The Pompones in particular, being studded with innumerable red, white, and yellow flowers, seemed even more attractive by night than by day, and when viewed from the galleries had a most charming appearance, whilst in the galleries themselves were long lines of cut blooms, chiefly of the large-flowering kinds.

In six plants of the large-flowering varieties, Mr. Glover, gardener to R. C. Lepage, Esq., Brixton, was first, with Dr. Maclean, Trilby, a magnificent plant of Jewess (orange red), Vesta, Prince Albert, and Chevalier Damage, all of which were very compact. Mr. George, gardener to Miss Nicholson, Stamford Hill, was second.

In three, Mr. Monk, of Tottenham, was first, with a fine plant of Christine, Rifleman, and Defiance. Mr. Weston, gardener to D. Martineau, Esq., Clapham Park, came in second, having fine plants of Chevalier Damage and Golden Christine. Prizes were also awarded to Mr. Glover, Mr. George, and Mr. Whitbread.

In six Pompones, Mr. Beecher, gardener to T. Chandler, Esq., Shooter's Hill, was first; Mr. Weston, second; and Mr. Ward, third; and among the plants which they exhibited were beautiful examples of Salamon, Requiriqui, Helena, Cedo Nulli, and Général Canrobert.

In three Pompones, Mr. Whitbread had the first prize; Mr. Beecher being second; and Mr. Ward, and Mr. Monk, the third and fourth respectively. Among these exhibitions were excellent examples of Golden Cedo Nulli, Bob, Cedo Nulli, Général Canrobert, and other well-known kinds.

Excellent groups were exhibited by Mr. Whitbread, Mr. George, and Mr. Ward, who each received prizes.

In the Nurserymen's Classes for specimen plants, Mr. Forsyth, and Mr. Oubridge, of Stoke Newington, were respectively first and second throughout. In that for six plants, the former had Aregina, Defiance, Christine, Alma, Annie Salter, and Rifleman; and in three, Prince Albert, crimson, very fine, Golden Christine, and Insigne.

Mr. Forsyth contributed Général Can-

Robert, Duruflet, Cedo Nulli, Hélène, Rose Trevenna, and La Sultana, all of which were very evenly grown, neatly trained, and covered with bloom. Mr. Oubridge had *Trophée*, mottled rose; and others already named.

In threes, Mr. Forsyth had fine specimens of *Hélène*, *Général Canrobert*, and *Lilac Cedo Nulli*. Both of the above exhibitors also brought large groups of well-grown plants, which contributed much to the effect of the Show.

In the Amateurs' Classes, Mr. Howe, of Shacklewell, was very successful, gaining first prizes both in the Class for six plants, and in that for three, with excellent plants of *Lord Ranelagh*, *Draco*, *Golden Christine*, *Chevalier Damage*, *Annie Salter* (very fine), and *Alma*.

In Pompones, Mr. Parker, of Stratford, had remarkably fine plants, upwards of 3 feet across, of *Général Canrobert*, *Cedo Nulli*, *Golden Cedo Nulli*, *Duruflet*, *Lilac Cedo Nulli*, and *Andromeda*. He received the first prize in the Class for sixes, Mr. Bolton being second, and Mr. Howe third; and in the Class for threes, Mr. Bolton took the first prize, and Mr. Parker the second.

Mr. Howe also contributed a fine group of pyramid Pompones, some of which were perfect models, and in beautiful bloom, and large-flowering kinds, both on tall stems and trained in bush form.

In Specimen Plants, Mr. Monk had a first prize for a very large and fine plant of *Golden Christine*, Mr. Howe being second with *Lady Harding*, also fine.

In the Pompones Class, Mr. Forsyth and Mr. Bolton took the two highest prizes for *Saint Thais*, and *Golden Cedo Nulli*, both of which were good specimens. Some very good pyramid Pompones were also shown by Mr. Ward, and Mr. George, among which were included Mr. Astie, *Reine des Anémones*, *Marguerite de Wildemar*, and *Antonius*. Mr. Ward had a first prize for these, and Mr. George a second.

Of Cut Blooms, which were exhibited in the galleries, there was a most extensive display, though, owing to the great length of the tables, the stands were not so close together as desirable for producing effect.

In twenty-fours, Mr. Monk had the first prize for a fine stand, among which we remarked *Queen of England*, *Cherub*, *Themis*, *Jardin des Plantes*, *Alfred Salter*, *Mrs. W. Holborn*, *Lysias*, *Cassandra*, *White Globe*, *Nil Desperandum*, *Novelty*, and *Goliath*. Mr. Ward was third, and Mr. George fourth, in the same Class.

In twelves, Mr. Monk was again first with beautiful blooms of *Queen of England*, *Jardin des Plantes*, *Cherub*, *Themis*, *Goliath*, *Lady Harding*, *Novelty*, *Lysias*, *White Globe*, and *Alfred Salter*. Mr. George was second, Mr. Ward third, and Mr. Wyness, *Buckingham Palace Gardens*, and Mr. Salmon, equal fourth.

In sixes, Mr. Monk was also first; Mr. Rowe, *Stamford Hill*, being second.

Large-flowering Anemone varieties were well shown by Mr. Ward and Mr. Monk, who were awarded the first and second prizes for that Class. Among the sorts they exhibited were *George Sand*, *Gluck*, *Marguerite d'Anjou*, *Louis Bonamy*, and *King of Anémones*.

In the Class for Anemone Pompones, the positions of the above exhibitors were reversed, both, however, showing very creditably.

Collections of Cut Blooms were contributed by Messrs. Monk, Rowe, George, and others; and in the Nurserymen's Classes, by Mr. Cattell, of Westerham, who had fine examples of *Queen of England*, *Jardin des Plantes*, *Beauty*, *Aimée Ferrière*, *Chinese Orange Incurred*, &c.; also, by Messrs. Wilkinson, Forsyth, Merrey, and others.

Large Anemone-flowered kinds were also well represented, especially by Mr. Cattell, who had some immense blooms of *Lady Margaret*, each about 5 inches across; *Handel*, a fine dark rose; and *Louis Bonamy*, remarkably fine. In Anemone Pompones, Mr. Forsyth took the lead.

In the Amateurs' Classes for twenty-four and twelve blooms, Mr. James and Mr. Slade were respectively first and second in both, Mr. Robinson, *Islington*, taking an equal first in the Class for twelve. Mr. Cakebread, who was first for six blooms, had a remarkably fine *White Globe*, *Aregina*, and *Jardin des Plantes* being also fine.

In the *Islington* Classes, Mr. Jeffries, the Secretary of the Society, and Mr. Robinson, were the principal prizetakers.

Anemone-flowered varieties of both kinds were also very successfully shown by Messrs. Pryer, James, Butt, and Hilleary.

In New Varieties, Mr. Forsyth was awarded the first prize, for *Duchess of Buckingham*, white; *Beverley*, a fine white; *Her Majesty*, a very pretty blush; *Prince Louis of Hesse*, and *Cleopatra*, rosy blush; *Antonelli*, brownish-salmon. *Golden Eagle*, dull red tinged with gold, came from Mr. Moxham.

Several pretty bouquets of cut blooms, interspersed with Ferns, &c., were shown by Messrs. Cattell, Glover, and others.

Miscellaneous articles were shown by Messrs. Butler and McCulloch, and Hooper & Co., of Covent Garden, consisting of *Hyacinth-glasses*, baskets of *Everlastings*, ornamental Grasses, &c.; and Messrs. Sutton & Sons, of Reading, had a very extensive collection of *Gourds*, *Grasses* both ornamental and useful, *Potatoes*, and seeds.

Messrs. Cutbush, Williams, E. G. Henderson, Videon, and Grimbley, contributed large numbers of fine-foliaged plants and evergreens for the decoration of the sides of the Hall.

A group of standard Pompones, with pyramidal heads, from Mr. Whitbread, and which were covered with blooms, formed beautiful objects, which we omitted to mention at the proper place.

FLOWERS OF THE PAST SEASON. VERBENAS.

"I wish you would come up and have a hanging-day." Such was the salutation wherewith a friend and neighbour greeted me, who is known all the world over as the first *Fuchsia-raiser* of his day, and of some *Verbenas* which still hold their own in the midst of novelties over and over again announced to drive them out of the field; and as his garden contains nearly all *Verbenas* worth growing, and I have generally a pretty fair collection of the novelties of the season, I think we can manage to form a pretty good opinion of the worth or worthlessness of the claimants to public favour: and so a hanging-day was named. It so happened that when we met for the purpose another friend came also, who, though now the rector of a London parish, had once been our neighbour, and he is an excellent florist and an especially good judge of *Verbenas*. Thus, with Mr. Banks's intelligent gardener, we formed a quartet, no way influenced, I think, by partiality—with no flowers of our own to decide upon, but simply to say what we thought about *Verbenas* in general. Previous to entering on our task we had a passage of arms on a few points. One was the failures of the *Verbenas* we were met to decide upon. For the past three years this failure has taken place. Formerly nothing could be more luxuriant than these *Verbenas*; but during the past three or four years the failures have been lamentable: the plants become rapidly mildewed—they are infested with thrips, and with another kind of insect, which seems to eat the cuticle of the leaf and completely disfigures the plant. Under a combination of such circumstances the plants in many instances pine away, spaces are made in the beds, and the appearance of the garden spoiled. Can any of your correspondents suggest a reason for all this? The plants put out are perfect models, have been carefully struck in the spring, are not planted out early (the end of May or beginning of June being about the time selected), and yet they will die. The ground is carefully prepared, and every attention is paid to them. Then, again, we were each to name a dozen of the best *Verbenas* for general purposes, bedding, and exhibition; and, as showing how much alike our tastes were, and how superexcellent some sorts are, I may mention that eight *Verbenas* in each of the four lists were identical. The judgment given in the following notes may therefore, I think, in general be relied upon; although, doubtless, like all other judgments, there are mistakes, but at any rate there are no wilful ones. Another point we had also to decide was what *Verbenas* out of the vast number grown we should propagate and what discard. Here again opinions may clash with our judgments, but I give up all idea of getting people to be of one mind on the merits of a flower. Look at *Roses*, for example. I saw the other day somewhere a list of good *Roses* of 1861, and

amongst them was Jean Baptiste Guillot, a flower with a bud as hard as a cricket-ball, which one can never get to open. And so it will always be: we must only give our own judgment, and let others modify it according to their own tastes.

In giving the following notes I have tried to distinguish between those which are suited for bedding and exhibition purposes. A bedding Verbena, I think, ought to be short-jointed and free-flowering, the colours distinct and not diverse, eyed flowers being objectionable; the size of the pip and shape being of less importance, although where all the points of excellence are combined so much the better. For exhibition the shape and size of the pip and truss are of the first importance. Edged flowers are here desirable, although they require self-coloured flowers to relieve them in a stand. I will take them as I did the Roses.

PERKINS & CO.

Lord Leigh, E.—Brilliant scarlet, with square yellow eye. This I regard as the finest flower of the year. It is, indeed, in colour very like Colossus and Foxhunter, but is distinct from them. Several times it has been, I fancy, exhibited as such, and in more than one instance has been detected. In the garden it is easily distinguished from either of them by its robust habit: for this reason it will, I think, make a good bedding plant also.

DOWNIE, LAIRD, & LAING.

Lord Craven, E.—Beautiful in colour—viz., a bright purple, but I fear it does not bear a sufficiently good truss ever to make a good exhibition flower. It may, I think, fairly have another year's trial.

TRENN.

Rugby Hero, E.—Light rose with carmine eye. Some strange mystery hung over this flower, for it was clearly none other than L'Avenir de Ballent, which is unquestionably one of the very best exhibition flowers we have, and for those who do not dislike eyed flowers in their bedding-out plants it is excellent also. The foliage is good, the flowers abundantly produced, and the individual truss large.

E. G. HENDERSON & SON.

Admiral Mitford, E.—Rich scarlet crimson flower with yellowish eye, a most refined flower. The growth is also short and good, but too flat for bedding purposes. It will be indispensable for the exhibitor, and may well be grown in the most select collection.

White Lady.—Good for neither exhibition nor bedding. Nothing can better show the impossibility of determining the future career of a flower than this. I knew that Mr. Henderson thought very highly of it, and that the somewhat glowing description in his catalogue was a reflex of his own judgment. The flowers are very small as well as the pip.

Blue King, B.—Somewhat in the style of Purple King, but lighter in colour. Likely to be an acquisition.

Eulalie.—Faint and washy in colours. Condemned.

Effie Deans.—Scarlet crimson with white eye. At one time I thought this would prove a good flower; but I fear not.

Glandover.—Dull purple. Of no use.

Nora.—Reddish-purple. Of this the same must, I fear, be said.

Peep o' Day.—Rosy salmon, with dark eye. After much consultation we came to the conclusion that this, too, must go into the black list.

Stella.—Burns at the edge, at least with us here it did.

Princess.—Violet crimson. This also we condemned.

St. Clair.—Plum-coloured, somewhat in the style of Purple King, but I fear not likely to be kept in our lists.

LOW & SON.

Flora.—Pink, with white centre. Poor.

Ruby, B.—Deep ruby colour; of excellent habit, very free-flowering, and likely to be useful for bedding. It will, too, I mistake not, often be found in the stands of exhibitors.

Rosalie, E.—Deep salmon rose. A good flower, which will merit another trial.

Purple Emperor.—Good in colour, but I fear its growth is small and delicate ever to make it a good bedding plant.

Marantha.—Another indifferent specimen. The habit is not to habit—it is condemned.

Chieftain, E.—Scarlet, white centre. A very good and effective flower, bright in colour, and with large pips.

Arkansas.—Somewhat dull in colour, and therefore condemned.

The Bride.—Light rose; somewhat like Ida, but not so good.

TURNER.

Miss Labouchere.—Not novel in colour, and therefore condemned.

Grande Boule de Neige, B.—This promises to be a very fine flower. The colour is pure and the habit good; not nearly so straggling as Mrs. Holford, and much more abundant in blooming.

Ruby King, B.—A good-habited flower of a bright ruby colour. The flowers are very freely produced, and I have little doubt that it will be a very desirable variety.

Fairy.—Too faint and dull.

BULL.

The Clipper, B.—A good flower, intermediate in colour between Lord Raglan and General Simpson. It is also of good habit, and will, I think, be a useful flower.

Such were the results of our notes. It will be seen, then, that the only flowers of the past season that we really considered first-rate were Lord Leigh, Admiral Mitford, Ruby, Chieftain, Grande Boule de Neige, and Ruby King; that of second-rate flowers there were Lord Craven, Blue King, Rosalie, and The Clipper; and that the rest were considered to be out of the field altogether. There were, I know, other Verbenas advertised, but we have not seen them, and I am inclined to think that they are not in any way acquisitions. They have not appeared as such at the metropolitan exhibitions, nor have I heard of any one who so considers them. I have not named L'Avenir de Ballent, as it was a flower of the previous year. It may, perhaps, serve as a guide to others if I add to this the list of those which we determined to retain:—Foxhunter, Lord Raglan, Brillante de Vaise, Nemesis, Géant des Batailles, Admiral Dundas, General Simpson, Miss Hughes, Madame Mahar, Madame Hermann Stenger, Mrs. Harrison, Striata Perfecta, Reine des Amazones, Fairest of the Fair, Mrs. Holford, Snowflake, Le Bon Nicholas, Madame Jenson, Fanst (this splendid flower I do not see in any of the catalogues, it is one of the very best we have), Miss Elphinstone, Zampa, Topsy, Thormanby, Madame Zoudier, Grand Eastern, Paul Tircas, Madame de la Nalline, and Victory.—D., Deal.

STOKE NEWINGTON CHEYSANTHEMUM SOCIETY.

THE seventeenth annual Exhibition of this Society took place on the 9th and 10th inst., and the display as usual was excellent both as regards plants and cut blooms. Fine blooming plants were ranged all round the room, whilst the central portion was occupied by the cut blooms and a row of pyramid Pompones, which in the denseness of their growth offered a marked advance on those seen at last year's Show.

For six plants the prize was awarded to Mr. Forsyth, nurseryman, Stoke Newington, who had Prince Albert, Defiance, Alma, Annie Salter, Aregina, and Lady St. Clair. Mr. Howe, exhibiting in an extra class, was first with excellent plants of Lord Ranelagh (orange red), Lady Harding, Orange Perfection, Draco, Hélène, and White Christine.

In six Pompones, Mr. Forsyth was first with capital plants of Cedo Nulli, Duruflet, Golden Cedo Nulli, Général Canrobert, Hélène, and Rose Trevenna. Mr. Howe was second. Excellent single specimens of Mr. Astie and Annie Salter were also shown.

The three pyramid Pompones, Général Canrobert, Cedo Nulli, and Hélène, from Mr. Howe, were beautiful examples of that style of training; and those from Mr. George, gardener to Miss Nicholson, Stamford Hill, who was second, were also good.

Of cut blooms there were several very good stands. In twenty-fours, Mr. Heals, of Westerham, had the first prize, having amongst yellows Plutus and Jardin des Plantes; Cassy, orange; Beauty; Queen of England; Mrs. W. Hillborn, and Lucidum; Her Majesty, a new silvery bluish; Alfred Salter, Ridgeway, Raymond, Hammonds, and Rabing.

Mr. Slade was second, having *Beverley*, a cream white; and *Aimée Ferrière*, a charming variety, white delicately tipped with pink.

In twelves, Mr. Heals was first, and Mr. Moxham was second; in sixes, Mr. Cornwall, Kingsland, had very fine blooms of *White Globe* and *Jardin des Plantes*.

Of *Anemone*-flowered varieties there were good stands of both large-flowering and *Pompon* varieties. In the former, George Hock, Gluck, Lady Margaret, and Louis Bonamy were well shown. In the latter some fine examples of *Madame Sentir*, *Madame Montels*, *Antonius*, and *Marguerite de Wildemar*.

As on previous occasions, the getting-up of the Exhibition was entrusted to Mr. Howe, the Secretary of the Society, and he deserves every credit for the pains which he has taken and the courtesy which he exhibits in conducting this, one of the most pleasing local shows near London.

ARE ORCHARD-HOUSES FORCING-HOUSES?

WOULD you inform me whether you would consider fruit grown in orchard-houses forced? I heard a discussion at a provincial show whether it should be called forced or not. It was eventually decided that it is forced, but for my own part I cannot see that it is. I should like, however, some higher authority to decide the question before I conform to the same opinion; for forced fruit I consider to be that which has had artificial heat applied in some form or other, and not that which has had merely protection, as I take orchard-houses give.—A. P. Z.

[We consider the provincial society's decision wrong. All fruits grown against a wall with canvases stretched before them would as justly be called forced as the fruits grown in an orchard-house, where, of course, no artificial heat is applied. In both cases means are adopted for retaining the heat afforded by the sun. The fruits are protected, not forced.]

ROYAL HORTICULTURAL SOCIETY'S COMMITTEES.—Nov. 10th.

FLORAL COMMITTEE.—This Committee held their meeting on this occasion in the council-room, much to the satisfaction of its members, and to the advantage of the specimens exhibited.

Mr. Veitch sent six specimens of *Lycaste Skinneri*, plants imported this year—they were distinct varieties, and were much admired, although but slightly differing from other varieties now in cultivation; *Polypodium album punctatum*, a new and very beautiful distinctly-spotted Fern, had a first-class certificate; *Davallia diversifolia Hillii*, which had received a first-class certificate on a former occasion; *Eranthemum tuberculatum*, a valuable plant from its flowering at this season of the year; its white Jasmine-like flowers and compact foliage gave it a very pretty character—a second-class certificate had been awarded at a previous meeting.

Mr. Earley sent out specimens of a seedling *Begonia*, with bright deep rosy flowers, strongly resembling *Begonia Sandersi semperflorens*.

Mr. Bull exhibited *Ancistrochilus zebrinus*, a very young and weakly specimen; a species of *Trichomanes*, from Trinidad, not sufficiently grown to prove its character; *Lindsea* species from Trinidad, a very beautiful plant, which was awarded a first-class certificate; two varieties of *Caladium Lowii*, one of which was named *reticulatum*.

Mr. Cattell, of Westerham, had *Picea pectinata pendula*, one of the drooping varieties, a form which is not uncommonly found among other plants of this family. Cut specimens of an *Ipomoea*, from Natal, with dull pink flowers, came from the Society's garden at Chiswick. The seed of this plant was sent home by Mr. Cooper. It has flowered in one of the stoves; unless it will bear a cooler temperature it will be of no value.

A *Chrysanthemum*, called *Late Dragon*, one of Mr. Standish's Japan varieties, was commended. Although not a *Gloists* flower, it is very showy, and its bright yellow flowers, with their dragon-mouthed or laciniated florets, together with its deep green broad foliage, make it a useful

decorative plant. These Japan varieties have the property of lasting longer in flower than our English *Chrysanthemums*. The plants, only late cuttings, each produced one very fine flower. We noticed two superb specimens of *Chrysanthemum Queen of England*, the white and yellow varieties. These were brought out of the conservatory from a collection which had been grown at the Chiswick Gardens, the plants being grown for the experiment of producing one large flower, which has admirably succeeded. A visit to the conservatory will be well rewarded, for finer flowers of the *Chrysanthemum* have never been seen in cultivation. They would doubtless have made a conspicuous feature at any of the meetings at which this flower is specially patronised.

FRUIT COMMITTEE.—John Kelk, Esq., in the chair. There was a fine display of fruit at this meeting, one of the best that has been seen at the Committee for a considerable time past; and the pleasure of the meeting was greatly enhanced by its being held again in the council-room, whence it never ought to have been removed. It may not be generally known that for the last twelvemonth the Committee has been poked about in all sorts of out-of-the-way nooks and corners. In the cold spring months they might have been seen in one of the cold draughty corridors of the Great Exhibition building, wrapped in great coats, and huddling together to keep each other warm; while in the burning heat of summer they were elevated into the upper gallery of the conservatory, there to be broiled, while two and sometimes three elderly gentlemen were in undisturbed possession of the council-room, devouring as much of the morning papers and the monthlies as they could get for nothing.

There were various prizes offered at this Meeting, Class A being for the best three dishes of dessert Apples, any variety. In this class there were eight entries, some of which contained several fine specimens of the varieties exhibited. Mr. Spivey, of Hallingbury Place, Essex, sent fine specimens of *Ribston Pippin*, *Fearn's Pippin*, and *Margil*, but, unfortunately, they had been in contact with hay or some other material that destroyed their flavour. Mr. Hall, gardener to Capt. Tyrrell, Fordhook, Ealing, had very excellent specimens of *Ribston Pippin*, *Blenheim Pippin*, and *Autumn Pearmain*; but they all yielded to the *Eldon Pippin*, *Cox's Orange Pippin*, and *Mickleham Pearmain* shown by Mr. Whiting, of the Deepdene, and to which the first prize was awarded. The second prize was obtained by a collection which was unaccompanied by any letter or address. It consisted of *Fearn's Pippin*, *Cockle Pippin*, and an unnamed variety.

In Class B there were nine entries, and many of them contained remarkably fine specimens. The *Chamontels* of Mr. Hall, of Fordhook, were so large and handsome that they were awarded a certificate of commendation. Mr. Spivey had fine specimens of *Glen Morceau* and *Passe Colmar*; and Mr. Curd, of Sulhamstead House, exhibited very fine *Beurré Diel*, *Passe Colmar*, and *Ne Plus Meuris*. The first prize, however, was awarded to Mr. Cox, of Redleaf, for *Glen Morceau*, *Chamontel*, and *Winter Nelis*, all three of which were richly flavoured, as were also the *Beurré Superfin*, *Winter Nelis*, and *Marie Louise* of Mr. Whiting, of the Deepdene, which received the second prize.

Class C was for the best dish of Grapes having a Muscat flavour, and the first prize was taken by Messrs. Lane and Son, of Berkhamstead, with *Muscat Hamburgh*, and such a bunch! Some good judges considered it weighed over 4 lbs. It was very closely set, too closely in fact, for the berries were squeezed together till some of them were in all sorts of shapes. The Vine is growing in an orchard-house, and the fruit was produced without artificial heat.

Class D was for Grapes without Muscat flavour; and the first prize was also taken by Messrs. Lane with *Black Prince*. They were fine, long, black bunches, and of excellent flavour. They, too, were produced in an orchard-house.

A Grape was received from Mr. Denham, gardener to the Duke of Roxburgh at Broommouth Park, near Dunbar, N.B., for the opinion of the Committee as to whether or not it was the *Muscat of Alexandria*. It appeared from Mr. Denham's letter that this had been exhibited for several years past at the Edinburgh Shows as *Muscat of Alexandria*, and that now an exception had been taken to it—that it was

not Muscat of Alexandria. The bunch and berry certainly have the appearance of Muscat of Alexandria; but the Committee unanimously decided that it was not that variety nor any other form of Muscat—in fact that it was not a Muscat at all.

Mr. B. S. Williams, of Paradise Nursery, Holloway, again showed a bunch of Royal Vineyard Grape, which appears to hang well, being perfectly firm and plump. Mr. McDonald, of Woodstock Park, Inistioge, sent a bunch of true White Tokay, which he anticipated would be the same as the bunch sent by Mr. Denham, but they were not at all similar to each other.

A fine fruit of the true Smooth-leaved Cayenne Pine Apple was sent by Mr. David Thomson, Archerfield, N.B. It was remarkably handsome and firm, and, having been cut for a month, refuted the opinion that is held by many—that it will not keep.

George Wilson, Esq., of Gishurst Cottage, sent some magnificent specimens of his orchard-house-grown Apples and Pears. The Melon Apple, Northern Spy, and Yellow Newtown Pippin were very beautiful; and the Pears, which consisted of Beurré Defais, Triomphe de Jodoigne, Chaumontel, Joséphine de Malines, and Doyenné Goubault were really wonderful. The fruit grown by Mr. Wilson are certainly the most successful examples of orchard-house culture we have ever seen.

Mr. Lidgard, of Hammersmith, exhibited immense stalks of Celery of the following varieties:—Kimberley's Hero, Williams' Red, Wall's Invincible White, Manchester Red, Coles' Red, and Coles' White. The latter were by far the best flavoured.

WINTERING PLANTS IN A COLD GREENHOUSE —VINE MILDEW.

I HAVE a small glass house fitted into a nook of the house where it gets all the east and south sun, and I am very anxious to keep my plants there all the winter without fire. One end and half the length are against the house, painted white. The front has a division and makes two windows which open. The door opposite one is to the west. There are two shelves in front, two shelves against the house, 3 feet apart, on two sides, and a table one-third of the length. It is built on an arch turned over a dry area which goes partly round the house, which may make it cold but not damp. My plants are chiefly young Geraniums of last autumn and this summer, some fine Fuchsias, all raised by myself, and three small Orange trees. Would frigi domo along the sides keep out the frost? Must I have it over the roof? Must I have a lamp burning at night when frosty? Would any possible contrivance do instead of fire? I should be much obliged for any practical directions.

I could by a piece of iron pipe make it communicate with a glazed verandah into which a drawing-room window opens, and to which a small greenhouse is attached, where there is a fire and a brick flue.

We have a small Grape-house with a border, in which we have Peach and Nectarine trees in pots; they bore very well this year, but one hundred bunches of Grapes were lost from mildew, or whatever the disease is called. What can I do to the Vine to avoid a repetition of the misfortune? and how can I keep out the frost without letting my new little house out of my own hands, as I do all the work of it myself, and it gives me great pleasure and interest?—E. M. W.

[We really wish we could help you effectually, but fear we must merely condole with you. The frigi domo on the sides would be help, but would not hinder a severe frost killing all your plants. That, too, would involve some trouble in taking off and putting it on. We would prefer calico or something of that kind for the roof; and if your front windows are high the calico might be put up in pieces inside, and remain there the most of the winter. Unless the glass-covered verandah were very warm, we do not see what benefit you could derive by bringing an iron pipe from the verandah. We do not know where the position of the furnace for the greenhouse is, but if a small handy furnace might have a small lat boiler placed on it, and pipe taken from it to your little house with a plug to turn on heat

place in the room adjoining is suitable, or if there is a room with a fireplace beneath the arch that forms the floor. That, however, would make you, as respects the fire, dependant on others perhaps, but still leave the giving of heat entirely in your own hands. If the place is at all lofty, a single lamp would not be sufficient unless of a good size, even with the assistance of the frigi domo. A spirit lamp would be best, as if the wick were kept short there would be no smoke. We think that one or two paraffin lamps would be the cheapest and might suit your purpose; but we are not sure whether the products of combustion might not injure your plants—we rather think they would unless there were funnel-shaped vessels of tin suspended over the lamps a few inches above them, and a small pipe from that funnel communicating with the external atmosphere. We would advise you to try one or two of these lamps without any covering of a funnel at first, and notice how much it will raise the temperature. The funnel over the lamp would take off the deleterious matter, and if the pipe were three-quarters of an inch in diameter that would give out the heat that rose through it.

We are now writing with the help of a composite candle that needs no snuffing, with a wire-frame fixed on the candle supporting a shade of paper, green outside and white inside, with a hole of about 2 inches in diameter at the top. The other night we boiled a small saucepan very shortly suspended over that hole. In our bachelor days we have with a similar simple contrivance boiled a small tin teakettle, when we wished for a cheering cup and could not be bothered lighting a fire. With a good-sized lamp we believe we could heat a small tin boiler like a teakettle, and heat the house with two-inch tin pipes taken all round it. Try the lamp first. From experiments with stoves we are well convinced that for small places there is no mode of heating so economical as having the whole of the heating material inside the place to be heated, but then the products of combustion must be allowed to escape.

We may state here for the benefit of young gardeners that myriads of such wire-guards are sold in London for 2d. each and the shades for 1d. each, and may be used until the candle is nearly done. Candles that need no snuffing are a great luxury, and composites about 11d. or 1s. per pound are cheaper and give far more light than tallow candles, but they do not stand carrying. We found, also, recently a valuable hint for getting all the light possible at night from a candle—viz., to use a white or light-coloured cover for the table. We never thought of such a thing before, though we ought to have done so; but just try and see the difference either for reading or writing, and especially if the candle or lamp is shaded. The reflection of light from the light colour of the table, even if the cover be a newspaper, is like the addition of another candle when contrasted with the dark colour. The light colour of the walls will be no particular point in the favour of our correspondent, as it will reflect heat during the day, and in a hot day will be apt to make the place too hot, and in cold nights from not being much heated during the day it will not have so much to radiate back again at night as a darker-coloured wall would have; but then in using a lamp at night little of the heat would be absorbed by the white wall from the atmosphere of the house. As said above we would simply try a paraffin lamp or two first and note how much they raise the temperature.

As to the mildew on the Grapes, very particular directions were given in a late Number, and we can only say, Wash the house thoroughly, Vines and all, and then wash the latter with a paint made of clay, lime, and sulphur; and next season, even if you should use a little fire heat, give plenty of air, leaving even a little on at night from the time the Vines break until the fruit is gathered, and apply flowers of sulphur to the first spot of mildew.—R. F.]

GARDENERS' NAMES FOR FLOWERS.

"G." has misunderstood my meaning, and taken my words in a sense in which I never intended them to be taken. When I said, "I feel sure that well-educated gardeners will say Amen to my remarks," it was not the anecdote alluded to, but the position I took on these words,

"I humbly think it would be a retrograde day in horticulture if gardeners' pronunciation of the names of flowers was received by the classically educated as correct;" and, again, more especially on these words, "Surely it is right in this, as in all instances, to endeavour to raise men to the correct standard, rather than sink the standard for the sake of the men." I honoured "D." of Deal, much for refusing to accept as the right pronunciation of a flower one which, as has been proved, was classically wrong, although the name of Mr. Beaton (now, alas! the late) was brought as an argument in its defence.

"G." will also do me the favour to notice, that I spoke of the four cases of very bad pronunciation as being "extreme cases," and, therefore, great exceptions to the regular rule. They had amused me, and I thought would amuse and not offend any reader of *THE JOURNAL OF HORTICULTURE*. They are perfectly true, and, of course, I did not ask any one to endorse my anecdotes, only my arguments. I can also assure "G." I was not quizzed by my "Johnny Bottle" friend. He was an old man, and once in my own employ; in better days he had been gardener to a near relative of a Peer. He was a very good gardener, though in book matters grievously ignorant. He seemed amused with the name, but spoke it, I am sure, in utter ignorance.

As an instance in an opposite direction, let me give "G." another bit of my experience. I was a few years ago looking over a very good garden with the gardener. It was his own creation out of a piece of flat pasture land. I was delighted to hear his most correct pronunciation of all names. In one instance he, of his own accord, gave me the Greek word correctly pronounced, from which our English name, he said, was derived. On remarking upon this man's wonderfully correct pronunciation to one of his fellow gardeners, he assured me that he was in this respect the envy of all his gardener friends.

Let me add as a word of encouragement to young, very young gardeners, that this man I speak of began life as a servant boy in a village.

In conclusion, let me assure "G." that there lives no man fonder of gardeners than myself. Many an hour's chat do I get with them when I can, and I wish them well, and never more truly was I their friend than when urging them to a correct pronunciation, to which many attain, to which some never attain. "G." will oblige me by noticing my words, "I am writing nothing the least degree offensive to the gardener class"—words by which I meant that my object was to do good.—WILTSHIRE RECTOR.

PORTRAITS OF PLANTS, FLOWERS, AND FRUIT.

STAUANTHERA GRANDIFOLIA (Large-leaved Stauranthera).—*Nat. ord.*, Cyrtandraceae. *Linn.*, Didynamia Angiosperma. Herbaceous stove plant. Native of limestone rocks 2000 feet high, at Moulmein. Flowers white, tinged with purple. Blooms in August. Promises to increase readily from cuttings.—(*Botanical Magazine*, t. 5409.)

GARDENIA OCTOMERA (Eight-parted Gardenia).—*Nat. ord.*, Rubiaceae. *Linn.*, Pentandria Monogynia. Shrubby plant. Native of Fernando Po. Flowers white, tinged with green; lip eight-segmented; tube eight-sided.—(*Ibid.*, t. 5410.)

MICONIA PULVERULENTA (Floccose Miconia).—*Nat. ord.*, Melastomaceae. *Linn.*, Decandria Monogynia. Introduced by Messrs. Veitch & Son. Native of Peru. Leaves beautiful, dark green, tinged with blue, and finely reticulated.—(*Ibid.*, t. 5411.)

WEBBIA PINIFOLIA (Pine-leaved Webbia).—*Nat. ord.*, Compositae (Vernoniaceae). *Linn.*, Syngenesia equalis. Cool greenhouse plant. Native of country between Cape Town and Natal. Flowers purple, blooming in August. "Probably will bear the open air in summer, and be grown in clumps, or even as a bedding-out plant."—(*Ibid.*, t. 5412.)

FUGOSIA CUNEIFORMIS (Wedge-leaved Fugosia).—*Nat. ord.*, Malvaceae. *Linn.*, Monadelphia Polyandria. Native of seashore in Dirk Hartog's Island, West Australia. Flowers white, with dark crimson blotch at base.—(*Ibid.*, t. 5413.)

ROSE, MADAME FALCOT.—A yellow Tea variety, deep-coloured and beautiful.—(*Floral Magazine*, pl. 169.)

PETUNIA, MRS. SMITH.—Raised by Messrs. Smith, Dul-

wich. Magenta-coloured, white-margined, and white-centred; very striking.—(*Ibid.*, pl. 170.)

GLADIOLUS, CHARLES DAVIS.—Raised by Mr. Standish, of Ascot and Bagshot. Received a certificate from the Royal Horticultural Society. Scarlet, picked out with purple and white.—(*Ibid.*, pl. 171.)

ASTELMA (GNAPHALIUM) *EXIMIUM*.—A very brilliant Everlasting from the Cape of Good Hope. Introduced by Messrs. Henderson, Pine Apple Place. Crimson calyx, and orange anthers.—(*Ibid.*, pl. 172.)

DEUTZIA CRENATA FLORE PLENO.—This double-flowered Deutzia was introduced by Mr. Fortune from Japan. A dwarf, hardy shrub. Flowers white, tinged with pink.—(*Florist and Pomologist*, ii., 153.)

NECTARINE, VICTORIA.—Raised by Mr. Rivers, by fertilising the *Violette Hâtive* with pollen from the Stanwick. As we said in September, the fruit "has all the merits of the Stanwick, with none of its defects." It is a delicious fruit, in perfection during the middle of September.—(*Ibid.*, 160.)

LABOUR AND LABOURERS IN IRELAND.

In answer to several inquiries, I would say that circumstances have led me to keep back in the meantime, as something good in the background, the account of some more places in Ireland I saw on my hurried visit. The manner in which these sketches have been received has been to me a source of pleasure not unmixed with sorrow, the sorrow being owing to something like an undercurrent of belief, that the pictures of improvement and comfort were too rose-tinted to be real. Some friends tell me I should have gone to this and to that place, and then I should not have failed to have seen misery, idleness, starvation, wretchedness, and hovels not fit for pigs to live in. Well, this may be all too true, but I hope it will have disappeared before I have the chance of having another tour in Ireland. Perhaps I was fortunate in seeing so much of industry and comfort, and I spoke as I saw—not but that I witnessed some miserable dwellings, and a few shivering workmen who were vainly "asking for leave to toil;" but, unfortunately, I had seen more than enough of such misery in Scotland and England too, and too often unaccompanied with that sympathy and willingness to help each other which has long been a prominent feature among the poorest in Ireland. That labourers in Ireland could be as intelligently active as their brethren in England, when anything like similar inducements were presented to them, was, however, the greatest of all anomalies. One friend insinuated that what was said of the working man at Straffan must have been all a myth borrowed from Clondland—in fact, said as much that the place could only have an "airy habitation" in my own imagination! Strange, indeed, that the industrious Irishman in England could be nothing but a tattered, lazy, misworker in his own land, with children crowding around him demanding his every energy! True, I never should imagine that the man who squatted in a chimneyless hut, and worked his long dreary hours for from 6d. to 9d. a-day, could even be expected to put forth the energy of the man who was fairly paid for his labour. On this account I was one of those that delighted in emigration as the chief means for raising the wages of the working man that stayed at home, and yet making work cheaper for the landlord and the farmer, by the superior quality and greater quantity of the work performed. There is no use in mincing the question. Where there are not the means for building up bone and muscle, there can be no energy for continuous labour. Low wages are, therefore, generally synonymous with dear high-priced work. Emigration, which in moderation would thus have been a blessing, if continued long at its present rate will turn a blessing into a curse, by depriving the land of its chief labour power. It is high time that those who for their own purposes have traded in Irish discontent, and the owners and livers by the land, should arouse themselves and present inducements to their labouring brethren to remain at home. The Marquis of Waterford at a large agricultural meeting stated, "That large farmers should encourage more field labour. He would be happy to give cottages for labourers, if his tenants would give them work." Let such work be judiciously given and remunerated as it ought to be, and then, but then only, will

emigration be stayed, and the descriptions of laziness, idleness, and carelessness become tales of the times long ago.

As in this work of gardening the opinions of gardeners must ever be interesting I send the following letter, cut out of the *Dublin Evening Post*, of October 31st, as tending to show that my statements were not at all out of the way.—B. F.

"Your report of the Portlaw Farming Society is a hopeful sign of better things for the labourer. The happy union of Portlaw and Curraghmore in the interest of labour is a promising subject. The Marquis of Waterford occupies a high position, and his opinions and acts are closely watched outside the limits of his own large property.

"In your report of the Portlaw meeting, the Marquis hardly does justice to the workmen of the South of Ireland. In speaking of Flax-culture, the Marquis says:—'The culture of Flax required skilled labour, and the great mass of the people in the South of Ireland were not in that high state of perfection, as labourers, that would warrant a landlord or any one interested in the prosperity of the soil, to say to the tenant, "Embark in Flax 80 acres." All are interested in the soil in Ireland, it is the taste and genius of the people, and it is a lamentable failure if the labourers are not equal to the operations necessary to bring a crop to maturity, which crop is a common crop in a less favoured part of the country.

"The farming and manufactures of Messrs. Malcolmson, as also their ship-building yard at Waterford, is strong evidence there is no lack of good workmen around Waterford. I think it a duty to offer you publicly my own experience of labourers in this part of Ireland: For five years I have had a great number of labourers under my charge, and I unhesitatingly assert that they are as obedient, as regular, and perform common operations of work as well as any labourers in Great Britain. I have seen with admiration what Mr. Horn has done with untrained workmen in building ships. I am not aware that there or here the workmen are over the average of their class. There may be some advantage here, as Colonel Tighe is well known to be a most kind and liberal employer, and it deserves to be told that in the past three years Colonel Tighe and his lady have spent large sums of money on extra labour, ~~namely~~ to give employment. The work executed is open to the public and speaks more to the credit of the workmen than any form of words I can use.

"Why, Sir, it is no use—nothing can be done with Irish labourers," is a cry without grounds—it is fudge—a wretched excuse for doing nothing; it is lack of enterprise and sincerity. Not the labourer that is to blame; he works—nay, begs for work—and works, under all the disadvantages that well can be. I apprehend there is quite as much want of capacity in those who conduct the workmen as there is want of ability in the labourers to perform reasonable duties. Nor is there that want of taste and want of order so much laid against the Irish tenant. See the noble mansion of Adair Manor, and ask the Earl of Dunraven who hewed that excellent stone and woodwork. Or go and see the cottages built by Mr. Naper, of Loughorew—Mr. Herbert, of Muckross—or those about this place, and you will find how readily the labourer improves.—I am, Sir, your obedient servant, CHARLES M'DONALD, *Woodstock.*"

GREENHOUSE TROPÆOLUMS.

ALL are agreed as to the desirability of variety, especially of colour, in the decoration of greenhouses and conservatories; and this object should be aimed at as much in winter as summer—indeed to my mind more so at the former than the latter season, for we have in winter fewer flowering plants to choose from. I read lately of a lady complaining of the monotonous appearance of her flower-borders—green and white, white and green, having become wearisome. Many people of small means make a similar complaint as regards their greenhouses, which are much less attractive than they might and ought to be.

Tropæolums are plants of easy management, and when once a person understands their mode of treatment they can be so managed as to add much to the decorative effect of the greenhouse. Where I first became acquainted with this class of plants they were held in high estimation, and great care was bestowed particularly in propagating them. This was done by taking off the young and tender points of their growths, inserting them in pure white sand, kept moist, under bell-glasses, where a moderate bottom heat could be maintained. It required a watchful eye to make them succeed well; and when they did form their small tubers it was some years before they could, from their size and strength, give much flower, however desirable it was to have them blooming in winter, with their singular yet very pretty colours.

About fourteen years ago I went to live in a part of the country where a neighbour was skilled in growing Tropæolums, and I will now very briefly detail his practice, marking that, from my friend's success in their cultivation, I was induced to try the same mode. It is now more than ten years ago, and I have not yet had any reason to abandon his line of treatment.

Supposing that we have four ordinary-sized tubers or roots of *tricolor* or *Jarvisii*, that we wish to grow each tuber

them whilst having as many flowers upon them as they can produce, proceed as follows: Take some good fresh turfy soil, with a little fibry peat chopped pretty small, and a good portion of silver sand, all well mixed together, so as to be a nice fibry mixture, such as will not be too close or become sodden. Having the compost all ready, the next proceeding is to take four pots about 8 or 9 inches in diameter at the top, to drain them well, placing moss or some similar material over the drainage, and then to fill the pot rather more than half full of the compost. Place the root into this, having the crown of the tuber all but covered, so that you can see when it begins to grow. A strong root will often give several shoots or growths. Let them grow on. When they are 6 or 8 inches long put in the stake or wire trellis on which the plant is to grow, as, if delayed longer, the growths of the plant might be injured in putting in the trellis, owing to their being covered with soil. The trellis having been put in, the next proceeding is to lay the young growth or growths across the soil in the pots, carefully covering them over with the same kind of soil; and as they grow go on turning them from side to side in the pot, gradually letting them rise higher to the top of the pot, and of course adding more soil each time. When done in this way, carefully bending them where there is a joint in the slender stem, they will generally form a little bulb at every joint.

Now to give an outline of how my friend grew his pots of Tropæolums. He generally had his in pots from 12 to 16 inches in diameter, and had the compost much the same as that which I have described. Into the large pots he often placed an inverted three-inch pot at the bottom, and filled in an inch thick of potsherds. Over this he placed some moss, and then filled the pots three parts full or rather more before he put in the tubers. Into the largest pots he would put six or eight good-sized roots, just covering them over, and placing them in a circle about an inch from the top. After they were started and 6 or 8 inches long, he put in the top of a compactly-grown Larch tree, perhaps from 3½ to 4½ feet high, or the top of a Holly tree from which all the leaves had been carefully removed, and as the plants grew he covered them over with the same kind of compost, still inclining them towards the stem of the Larch tree on which they were to grow. He allowed them to ramble all over it; and in the course of time it had the appearance of a cone of 2½ or 3 feet wide at the base and 4 feet or more high from the pot. Trained in this way the plants had a charming effect in a conservatory during the spring months, and afforded a nice contrast when placed beside some of the white *Azaleas* on the one side and a nicely bloomed *Rhododendron* on the other, backed up with a *Camellia*, or even when placed alone upon the floor of a conservatory, where the pot could be seen and admired on every side.—G. Dawson.

TRENTHAM.

(Continued from page 376.)

At the south-west corner of the main garden, and at the west end of the ribbon borders, is one of the most elegant conservatories of the day.

It is ridge-and-furrow-roofed, 14 feet in height, fully 70 feet in breadth, and 100 feet in length, as far as could be judged by pacing it. We have always understood that this was the first house in which the ridge-and-furrow roof was used to cover a large space of ground without any great altitude of roof, and so preventing the drawing of the plants, and doing away with any necessity for stages and platforms. The width of the pathways, and the neat stone edgings fringed with *Lycopods*, &c., conjured-up ideas of ease and gracefulness; whilst the somewhat stiff trimness of the massive specimens in the beds and tubs, was relieved by the wild flaunting luxuriance of the dangling creepers and climbers. Among the most prominent of these were fine-foliaged *Acacias*, different *Passifloras*, *Taenidia mollissima*, *Bignonia jasminoides*, and the beautiful crimson *B. Chirera*, *Ipomœa Learii* in fine condition, the never-ceasing-flowering *Habrothamnus elegans*, the light blue *Plumbago capensis*, and a huge mass of the *Cestrum aurantiacum* with its long racemes of its golden flowers

all the winter. It would be endless to enumerate the fine plants in the beds of this house, mostly trained less or more in the pyramidal form, which gives more room for the streamers of climbers and the baskets of creepers suspended chiefly over the pathways. The house is always kept gay by fresh introductions during the season. In the end of August we were most struck with fine-flowered Fuchsias; large Brugmansias; a fine plant of *Luculia gratissima* covered with buds; a huge barrel-shaped plant, reaching nearly to the roof, of *Camellia reticulata*, well supplied with large buds; very large plants, in the highest luxuriance, of other Camellias and Azaleas, less or more in the pyramidal shape; fine masses of *Hedychiums*, as *Gardnerianum* and the sweet white-flowered coronarium; a good plant of *Rhododendron Dalhousianum* with well-swelled flower-buds; and at the north corner of the west front, inside, was a strong plant of the New Zealand Flax, with a seat on the pathway behind it, from whence you could see any one crossing the iron bridge over the river, and be yourself concealed by the thick foliage of the Flax, possessing as it does a luxuriance we might look for in vain out of doors in the warmest parts of these islands, though it thrives pretty well in some parts of the south of Ireland.

The west front of this conservatory is separated from the river by gravel and a sloping bank of turf delightfully green; and a little farther north, opposite the foot-bridge, is a large parallelogram of gravel backed by evergreens; and on that parallelogram are inscribed in broad letters of Box the names of the four sisters of the present Duke, with "*Vivit memoria*" beneath them. On our previous visit to Trentham Mr. Fleming told us he could use salt water for destroying weeds inside and round these letters without injuring the Box, though for ourselves we always found Box very easily injured by salt in any shape. Whether and how salt is now applied we failed to inquire, but all the walks were in excellent condition.

Close to the north side of this fine conservatory are elegant gates that form, we presume, the chief entrance to the kitchen garden from the mansion, these gates being in a line with the arched Pear-walk running from east to west which we have already noticed. At the back of the conservatory is an open square of gravel, as if for setting plants on in summer if desirable. The back of the house was clothed with Ivy, but beautifully draped with long streamers of Honeysuckle and Ayrshire and other climbing Roses allowed to dangle naturally, with little or no appearance of training to molest them. Trim-training would have spoiled their beauty. It would be well if gardeners could be persuaded at times to "let well alone."

We now pass the gardener's house again; cross the roadway and the rustic bridge over a brook that falls into the Trent, and find ourselves in the village of houses and pits on the north side of this main entrance. Here too we are, as in the principal division, presented with the same ideas of the ornamental. Here is the background of shrubbery all round, raised beds skirted with Ivy and *Cotoneaster* alternately, filled with *Geraniums*, *Humeas*, &c., and in the front of the large stove-range is a beautiful flower garden, the beds edged with Thrift, and the colours chiefly belted and well contrasted.

We first come to a very long house called the Brook-house, and almost entirely filled with fine plants of Azaleas, as it is found useless to put them out of doors in summer. Then opposite this at right angles is another long range with ridge-and-furrow roofs, the first a greenhouse with a stage, walk along the front, and Tea Roses against the back wall. These Roses are exposed to the full air, and are kept rather dry in autumn so as to harden the wood, and then there are plenty of fine Roses all the winter and spring in the usual greenhouse temperature. The stage in this house is also cleverly managed, the end and the front, as high or higher than the front shelf, are covered by a trellis filled with Camellias, Acacias, and Scarlet *Geraniums*.

Next and much wider is the moist stove or tropical aquarium conservatory, there being a tank supplied with hot water immediately in front of the entrance. The back wall is formed into a rough rockery for Ferns, Mosses, &c. The plants over the aquarium and elsewhere in pots were chiefly distinguished for the beauty of their foliage, as *Cycasphyllum magnificum*, *Alocasia metallica*, very fine

plants of varieties of *Croton*, *Dracenas*, *Marantas*, *Musas*, &c., and fine specimens of the beautiful finer kinds of *Caladium*. We presume the *Nymphaeas* and other water plants were chiefly in a state of rest. The front curb of this house is fitted with a shallow pan, and for the whole width it was a dense green mass of the dwarf *Lycopodium apodum* or *densum*. The beauty of these plants as specimens was more than rivalled with the wild grandeur of the flaunting creepers above. For natural magnificence (for the art to effect it was completely hidden), we have seen nothing to compare with it except the middle division of the stove of Mr. Bewley near Dublin. In this latter case, however, the striking effect was produced entirely by the rich-leaved streamers of the *Cissus discolor*. Here this plant was also in its glory; but mingled, shaded, and contrasted; with the foliage and flowers of *Stephanotis floribunda*, *Ipomoea Horsfallii*, &c., *Passiflora princeps* and *quadrangularis*, &c., *Allamanda cathartica*, *Bignonia venusta*, &c. So wild, mingled, and luxuriant are these and others that it requires close examination to perceive whence the stems come from, and to note that all are under control. The beauty of these climbers in summer depends greatly on the treatment they receive in autumn and spring. In September the tank is dried, plants requiring a moister atmosphere are removed elsewhere, and the house, as a whole, is kept drier and warm, but with more air to harden and ripen the shoots of these climbers, which are gradually pruned pretty close home in winter when more light is wanted for the plants in the house. This causes the climbers not only to break strongly and healthily, but with shoots that will be smothered with flowers. At the end of this house is another greenhouse filled with fine close-trained plants of the later kinds of Azaleas, and here too the back wall is covered with Tea Roses treated as already detailed.

Amongst other things we must state that we looked into a beautiful span-house devoted chiefly to Heaths, Epacris, and other New Holland plants, the path being sunk in the middle of the house and the stage on each side of it; then into a span stove-house, where, among other fine things, were a great many of the most beautiful plants of *Crotons* plunged in a hotbed after being potted afresh; then into another long span-roofed stove, small as to width, but not small as to length, filled with *Euphorbias*, *Gesneras*, &c., and the roof a picture from end to end with *Hexacentris mysorensis* and *Thunbergia laurifolia*, the latter in very fine condition. Then we looked into a pit filled with softwooded stove plants of the most free-flowering kinds, as *Poinsettias*, *Justicias*, *Gesneras*, &c., that had not long been underpotted, for these plants are wanted in such quantity for house-decoration and to go into vases, basins, &c., that after they have been pretty well grown it is often necessary to shake away a good portion of the soil, to underpot them, and have them well established again before packing them thickly in vases, &c. Many vases and zinc pans are filled and kept ready for moving into the finer receptacles designed for them. We also noticed whole beds of *Linum monogynum* in smallish pits, *Cinerarias*, *Primulas*, *Crassulas*, *Calceolarias*, for everything is made to serve its purpose. Were we to tell of Cucumber-houses in all stages, Melons in houses and pits in all stages, pits and houses filled with beautiful Vines in pots, ditto with Figs, and all the rest of it, and all in small pots for their size, telling that they had something to nourish them besides the earth you saw at the surface, we should want a Number for the express purpose.

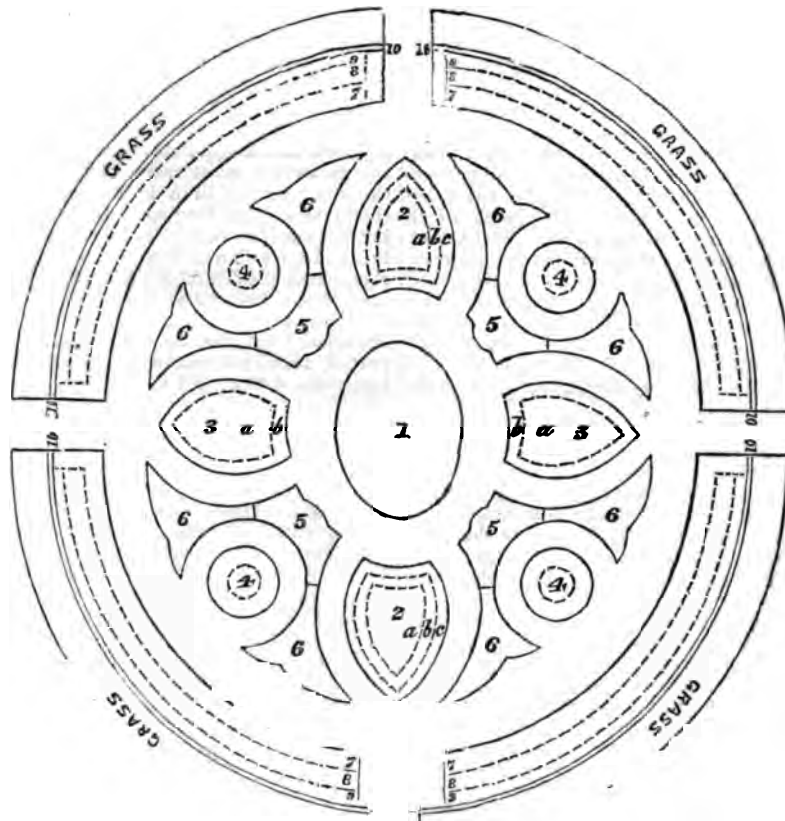
One secret we did find out in our solitary ramble in the morning—a large shed filled with mellow coddling and a huge heap of boiled bones beside it, and the men were cutting the dung with a gusto as if they knew its value. A second secret was a huge mound of bright-looking coals at a price which we in the south must not yet think about, and it is always well to keep down every rising of that nasty spirit called envy. A third secret, we did not find out, because we forgot to make inquiries about it, though we had plenty of reminder too in seeing a vapoury smoke issue from a black funnel among some trees, and not a wreath over all these houses and pits. The secret, the great secret which we ought to have found out, is how from all these houses and furnaces the smoke is conveyed by tunnel, and in low-ground too, to this one concealed funnel as a chimney top.

One other matter we did recollect to inquire about, and that was as to the boilers used; and found that now, as we knew formerly, the saddle-back is employed in preference to all others. One saddle-back heats the whole of the Muscat range, and houses and rooms on the north besides; for though two boilers are placed side by side for safety, in general one only is wrought. We know that such boilers were used in the splendid new houses at Welbeck, and, if we recollect rightly, they are also used at Garston by Mr. Meredith. Mr. Henderson, however, has nothing to say against upright, tubular or other forms of boilers, and has managed all kinds in his day; but, like ourselves, he looks on the vast superiority of one over another for continued work as harmless flights of the imagination. He also candidly stated that no tubular boilers of any great height could be used at Trentham on account of water being so near the surface, and that a good saddle-back required about the least sinking for a convenient fireplace. We also understood that the size of the flow-pipe where it joins the boiler is larger than usual; and the reasons for this change would, no doubt, be gratefully received by our readers, as under such superintendents nothing is done from mere whim or love of change.

Here we ought to stop this article, but must add a few words about this side of the water, and that chiefly for the purpose of hinting that the ornamental and useful under glass may be associated with the beautiful outside. We did not find a single flower-pot, full or empty, standing about any of these houses out of doors or out of place. Flowers, some of the most beautiful, attended you everywhere. Pentstemons and Gladiolus were particularly attractive; the

latter were just past their best but fine, and had been forwarded in pots before planting out, that they might be in full bloom before the family left for Scotland.

Just north-east of all these houses, pits, &c., separated from them, and backed by evergreens and trees except at one point, is the children's cottage and the children's garden, placed on a beautiful green lawn enriched with good specimens of evergreens, and a beautiful *Pinus cembra* near the cottage. This one opening takes the eye over part of these houses in this background, and brings into view the nice rooms, &c., at the back of the Muscat range. This view is quite in character with the cottage, but if ever it be desired a few shrubs will shut out the whole and give us a house and garden "in a wood." This was wont to be a favourite retreat of the family when they were young, and, all utensils being provided, here they used to have their parties, and boil, and roast, and fry, and frizzle for themselves, contending, no doubt, who would turn out the best vegetables, the best pancakes, and the best puddings, and partaking of them with a relish which they never could feel for the richest viands at their noble parents' table. We have known young lords carry home Potatoes in their pockets, and roast and boil for themselves. We have known of others that were supplied with materials, and obliged to mend their own stockings and sew on their own buttons. Such men and women wherever placed would never be shiftless when thrown upon their own resources. "Can do" is always carried about easily; and the knowledge of the "can do" goes a great way, even among the nobles, to make them good masters and to insure for them good servants.



This pretty garden is the best from the cottage.

Mr. Henderson's residence is the best from the cottage.

Mr. Henderson's residence is the best from the cottage.

1. 18 inch covered v and handle across the path. The Rose

other be 2. a. Calceolaria Prince of Orange. 3. a. Calceolaria Prince of Orange. 4. a. Calceolaria Prince of Orange.

5. a. Calceolaria Prince of Orange. 6. a. Calceolaria Prince of Orange. 7. a. Calceolaria Prince of Orange.

8. a. Calceolaria Prince of Orange. 9. a. Calceolaria Prince of Orange. 10. a. Calceolaria Prince of Orange.

The beds were beautifully filled, and the garden as a whole a delightful spot, and quite large enough for the majority of our readers.

R. FISH.

(To be continued.)

A PERSONAL NARRATIVE OF POISONING BY A NOXIOUS FUNGUS.

(Communicated to the Society of Amateur Botanists.)

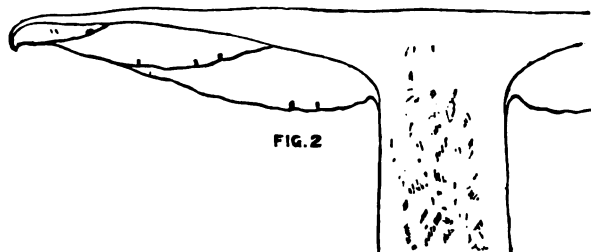


FIG. 2

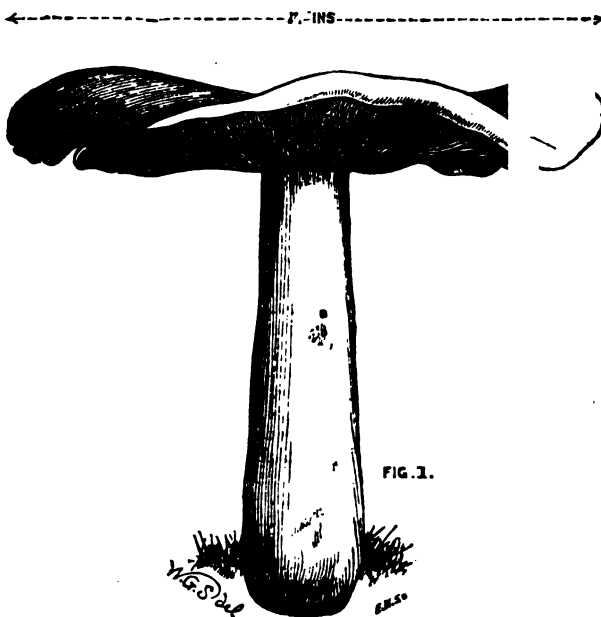


FIG. 1.

ORD. 1.—AGARICINÆ.

SERIES 2, HYPOGÆUM. SUB-GENUS 12, ENTOLOMA.

215. *Agaricus* (Entoloma) *fertilis*.

Pileus smooth, pulverulento-squamulose, dry, fleshy, obtuse; stem fibrillose, sub-squamulose, somewhat bulbous; gills flesh-coloured, adnexed. In woods. Smell like that of fresh meal. Pileus 4 inches or more across, of a pinkish-buff.—(Berkeley's British Fungology.)

At the request of the President of this Society I beg to lay before the Meeting a few particulars regarding the poisoning of myself and family by a dangerous fungus found in woods, and scientifically known as "*Agaricus fertilis*."

The single specimen eaten was gathered in Bishop's Wood at the close of September. I was there, searching for fungi in general, with my friend and patron, Mr. M. C. Cooke, when the specimens of *Agaricus fertilis* presented themselves. I took one home, the smaller one, and Mr. Cooke took the larger.

Having constantly eaten a variety of species of fungi without unpleasant results, I was not sufficiently cautious over this one, and the consequences that followed the consumption of this specimen were entirely owing to my own carelessness in not comparing it carefully with published descriptions. I had the same day seen a drawing of *Agaricus giganteus*, and I thought the species gathered was certainly that, but I did not refer to Berkeley for a minute description, or I should have seen my error at once, as I did when too late. After breakfast I most foolishly prepared

the upper part of it for luncheon, throwing away the stem and even part of the pileus or top.

At the time of eating it I thought it was all right, as there was nothing at all unpleasant or acrid in the taste of it either when raw or cooked. But I ought to say, in justice to the fungus, that I kept it under a propagating-glass for two days after it was gathered.

The fungus cooked in first-class style with butter, salt, &c., in the recognised way, I proceeded to test its gastronomic qualities, which I found to be of a high order. There was very little of it when cooked—not more than half an ounce at most; of this I ate, perhaps, one-half or a quarter of an ounce. Mrs. Smith, who is an amateur fungologist, ate two or three very small pieces, and one of my children, two years old, came round the table, and took one or perhaps two very small pieces off the plate. As I thought it was all right I did not prevent her. So the cloth was cleared, and all appeared well.

I shall now proceed to give an account of the effects of this particular species; and although it is not specified in Berkeley as poisonous or suspicious, it will be seen by the sequel to be one of the most violent and dangerous in its effects of the whole tribe.

It so happened that morning that I had business in the city, a very unusual thing for me, so I will narrate my own symptoms and experiences first, apart from my family. I had to start by a train on the North London railway for Fenchurch Street about a quarter of an hour after I partook of the fungus; and I can well remember that while waiting for the train, close by my own home, and within twenty minutes of eating the species of fungus, I was overtaken by a strange, nervous, gloomy, low-spirited feeling that was quite new to me. I, however, thought nothing of the fungus. By the time I reached Fenchurch Street this feeling had considerably increased, accompanied by a dull headache; but I still thought nothing of the fungus. My business took me through Billiter Street on my way to Devonshire Square, and as I passed some of the warehouses I noticed some men loading and unloading certain goods that gave forth a most powerful and oppressive odour. I had no sooner got out of Billiter Street than I found my headache much worse, accompanied by an unpleasant swimming sensation, while two or three sharp pains shot through my stomach. By some strange process of reasoning I now attributed my indisposition to the stench in Billiter Street, an opinion I retained till I got home. I soon transacted my business in Devonshire Square (it only engaged me a minute), and then I made the best of my way back to Fenchurch Street, my illness increasing with every step. Still the fungus never entered my mind. When I got to the station my head was aching and my brain swimming to such an extent that I could hardly walk; while everything in the station appeared to be moving with death-like stillness, either from side to side, up and down, or round and round. This is no exaggeration whatever, and worse is to come yet; and what appears so remarkable to me is that such terrible effects were produced by eating such a small quantity; one would think if five or six had been eaten instead of one (minus stalk and part of top), that instant death would have ensued. I will, however, continue my account. I staggered into a carriage, and reached home in twenty minutes, so ill that I could hardly place one foot before the other, with the overpowering feeling of sickness increased to a degree that was unbearable, although I could not be sick. I knocked at my door with the determination of going to bed directly I got in, sending instantly for the doctor, and making up my mind for a severe attack of brain or some other fever; and I had never all this time thought about the fungus we had for luncheon.

I must now for a few minutes revert to my little child and her mother. On knocking at my door the first thing that called my attention was the delay in answering the knocks. The door was opened, however, in a few minutes by Mrs. Smith, who could hardly walk to the door, and could not speak for crying. I will here make another statement that may appear somewhat apart from the subject. We received a letter from the country two or three days before this occurrence, stating that a brother of Mrs. Smith's lay apparently dying after a serious illness, and no hopes were given of his recovery. On seeing Mrs. Smith thus distressed I

immediately thought her brother was dead (I never thought of the fungus), and after telling her I was certainly dying too, I began to say a word or two expressive of my sorrow for her loss; but before I could say many words she let me know that she had been worse than I had been; that the little child was downstairs in the arms of a neighbour, apparently in the last stage of existence (as Mrs. Smith was too prostrated to hold her own child), while the servant was sent out for the doctor. When I saw how matters stood my illness to a certain extent seemed to pass away, and on the emergency of the occasion, ill as I was, I left home to get immediate medical assistance, which I was fortunate enough to procure pretty readily.

It appeared, directly I left home Mrs. Smith took our little child out for a short walk, and bought a slate and pencil; but the mother had no sooner left the shop (about twenty minutes or half an hour after luncheon), than the same swimming of the head came over her that attacked me; and what with headache and sickness she could hardly reach home with her child in her arms. Directly she got into the house the little girl suddenly fell sick, and the sickness speedily became so violent that by the time I returned she was perfectly prostrated.

On the first day Mrs. Smith and the little girl were much the worst of the three; but after the first and second days I was worse than all. The effect on my wife was utter prostration by the vomiting and nausea, and a feeling of loathing everything eatable that was brought to her notice. Her vital powers were so greatly reduced at the end of the first day that she had no strength to be sick, and brandy had to be freely administered.

The little child was certainly the most affected, and if the medical attendance had been delayed I am sure she could not have survived more than one or two hours. She was in a deep stupor or sleep, with her eyes wide open and fixed, her fingers occasionally clenching convulsively, and mouth twitching. At intervals of about five or ten minutes a fit of sickness appeared to come over her, by the heaving of her chest and stomach; but after the first hour she had not strength enough left to be sick.

The doctor administered two emetics and other medicine to her, and found it necessary to attend her three times a-day for the first two days, and remained in attendance nearly a week. The little child remained in the stupor for twenty hours, and after this time gradually recovered and regained strength. This ends the notice of the child.

Mrs. Smith, after two or three days' medical attendance, gradually got all right again; but this was not the case with me. I shall now give a few details of the latter part of my own illness, and conclude the paper.

I certainly ate the lion's share of the fungus—say a quarter of an ounce. The feeling of sickness and nausea did not leave me for a fortnight, and for three or four days I ate comparatively nothing and drank nothing but coffee and milk. In my case, on the first day it caused swimming of the brain to an alarming degree, the most distressing headache, and vomiting, and excessive purging. I note the purging particularly, as I was the only one of the three so affected: this lasted for four or five days, accompanied by a feeling of loathing, sickness, and lassitude. At nine in the evening of the first day a heavy drowsiness came over me, and I fell into a deep sleep for twelve hours. Racked and harassed by dreams, in which fungi, and particularly poisonous fungi, always played a prominent part, advancing and retreating, increasing in size and diminishing in an endless maze; but always fungi—poisoned by fungi; dead poisoned children—dead fathers and mothers, &c.

This sleepiness was shared by my family, but not to such an extreme degree; for, after my twelve hours' sleep of the first night, I came down stairs and thought I could do a little work; but I fell into an uneasy but deep sleep in my chair at ten o'clock, and did not wake till two, making four hours more sleep. I took hardly anything to eat the rest of the day, and at five o'clock fell asleep again, and slept till the next morning, and had a better night.

noticed on the second night that all the joints of my legs and feet were quite stiff, and I could not move them without inconvenience and pain; but in the course of a day or two this gradually passed off. For three or four nights I also noticed that when I lay down to go to bed, I

ming of the head and sick feelings accompanied it; but it all gradually passed away during ten days or a fortnight.

I certainly received a most severe lesson with my experience, and shall be careful in the future when I gather a species new to me to determine the species with certainty before I cook them.

In my short paper on the growth of "*Phallus impudicus*" I stated that my rabbits ate the porous stem quite readily; so when I knew the effects of *Agaricus fertilis* on the human system I thought I would try it on rabbit economy.

I recovered the stem I had previously thrown away, and placed it before the rabbits for their approval, but they refused it with disgust, although the taste was not unpleasant. I think, therefore, we may say that should the choice in future lay between *Agaricus fertilis* and *Phallus impudicus*, the latter should be preferred for culinary purposes.—W. G. SMITH.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE heavy autumn rains probably retarded the progress of trenching and other ground operations; the present weather offers abundant opportunity for continuing such work. The garden by this time should be freed from all unnecessary and exhausted vegetable matter, and put generally in a clean and orderly state. *Asparagus*, the beds if not already attended to, should be manured and dressed for the winter, and a portion taken up for forcing purposes. *Endive*, cover the plants with a slate or tile laid on each, and close the whole over with dry leaves, finishing with some stable-litter; in this manner they will blanch well, and be fit for use throughout the winter. A very considerable store of leaves should also be collected for lining hotbeds, Sea-kale covering, &c. *Herb-beds*, if they are not yet cleaned and done up for the winter, they should be attended to without delay. A slight coat of very rotten dung should be laid on them, for the double purpose of protecting the roots from severe frost, and to enrich the soil. *Lettuce*, the Cabbage varieties planted in frames and intended for winter use, will not require much air if the soil is light and dry; should they need a little water, give it to each plant separately from a watering-pot without a rose. Never expose the plants to heavy rains. *Peas*, a sowing of these and also Broad Beans should be made at once, choosing the most sheltered piece of ground at command, and which should also be of a light dry nature. Use an early hardy sort, such as the Daniel O'Rourke Pea, and Mazagan Beans. *Rhubarb*, the forcing of this and also Sea-kale, must now be attended to, and provided there is a good stock of strong roots, a supply of these will be easily kept up. Where there is room to spare in the Mushroom-house, this forms a very suitable and convenient place for forcing them. The roots to be placed on a slight bed of warm dung, filling up the spaces between them with old tan, or the soil and manure, mixed, from an old Mushroom-bed, giving a good watering to wash it in amongst the roots. The bottom heat should not be allowed to exceed 70°, as too much heat is not favourable to securing strong growth, and, except for the first crop, it may be dispensed with altogether. Clear up all decaying leaves, and stir the surface of the soil on dry days among growing crops, as Cabbages, Spinach, &c.; also, get all vacant ground manured and ridged-up as quickly as possible, in order that it may be exposed to the influence of the winter.

FLOWER GARDEN.

A fortnight's fine weather in November, while it seems to prolong the autumn by permitting us the enjoyment of the fading glories of vegetation, also affords us the opportunity of proceeding with the various important operations connected with the garden; finer weather could not be desired for planting evergreens, &c., than we have had lately. This sort of work should be in active progress. The clearance of all decaying matters from the beds and borders should be unremittingly followed up, the remaining leaves will soon be down, when a final clearing may be made throughout the shrubberies for the season. A little care may preserve *Chrysanthemums* for some time, especially those trained against a wall. The simple protection of a mat will save the plants from frost, and it is to be regretted that the

and store Dahlias, Marvel of Peru, *Salvia patens*, if not already done, and finish planting bulbs. The best place to keep Dahlias is under the stage in the greenhouse. Where this convenience is not to be had, perhaps the next best way to preserve the tubers is in a cool cellar; at all events they must be kept from damp. Beds intended for Ranunculus in February, to be turned over, and any fresh compost or soil will be better added now. Choice plants in the borders, intended to be protected for the winter by slightly covering the roots, &c., should be seen to at once. Roses of the tender kinds, especially standards, to have a bunch of dry moss, or a wisp of hay or straw, or some dried Fern bound round the head, and the whole well fastened to a stake.

FRUIT GARDEN.

Fig trees must now have some dry fern or spruce boughs nailed over them to prevent injury from severe frost. Some prefer gathering the shoots into several bundles after being unnailed, and then wrapping mats round them. Prune and nail Vines, and other fruit trees as before recommended. Brush the leaves off the Peach and Nectarine trees with a new birch broom, and unnailed the small shoots. The planting of young fruit trees, and transplanting or raising those of larger growth, to be vigorously prosecuted: the season is very favourable, and the earlier these operations are performed, the greater is the chance of success.

GREENHOUSE AND CONSERVATORY.

Sunshine and clear skies are not the traditional enjoyments of November in England. The inmates of these structures usually suffer from the diminished light and the fogs and mists of this dull, dreary month. The frosty nights will render a recourse to fire absolutely necessary, while the succeeding bright days will allow the advantage of a free circulation of fresh and wholesome air. Regularly remove all dead leaves, and prevent the spread of moss in all situations. Creepers to be closely tied that they may interfere as little as possible with the action of light on the plants. The bulbs of the Japan Lilies to be shaken out of their pots, and to be repotted in half good fibrous loam, and half peat soil, or decomposed leaf mould, as a substitute for peat, with a small portion of silver sand. As the bulbs, when making their spring growth, emit roots for 2 or 3 inches up the stem, they will now require to be planted that depth from the surface of the pot, and to be earthed-up with the compost in the spring. All plants in these structures to be kept rather dry, giving whatever water may be necessary on the mornings of fine days, so that the superfluous moisture may be removed before the evening. Pelargoniums, herbaceous Calceolarias, Cinerarias, &c., for late blooming to be kept cool and airy, and should not be allowed to suffer for want of pot-room. Plants intended to flower early should be encouraged with a gentle heat, keeping them near the glass, and admitting air at every favourable opportunity.

PITS AND FRAMES.

Abundance of air to be continued as long as possible, avoiding, however, the least wet. As long as the thermometer stands above 32°, give air.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

WEATHER, with the exception of Lord Mayor's-day, which was fine throughout, windy, wet, with frosty mornings, which have at length settled our Dahlias. We have some Dwarf Kidney Beans, sown in July under protection, and which are still, on the whole, fair, without any artificial heat; but we notice that the elder pods are becoming a little hollow and do not crack easily. For a number of years we have generally wanted a good supply about the beginning of this month, and this sowing used to give us a good yield without any help from hot beds or hot pits, &c. We may keep them to the end of the month, but we do not think they will be so crisp as they ought to be. A Dwarf Kidney Bean is one of those things that are rather the better for being forced. To succeed these under protection, we need to sow in pots in the end of August out of doors, and place them under glass where a little heat could be given them by the end of September if needed. To keep up

a succession sow now. We generally, to save room, sow in boxes, say 3 feet by 1 foot and 6 inches deep, as little space is occupied until the shoots begin to come, when the plants may be turned out in a bed or in pots in warm soil. Heated soil is of importance. The replanting causes the plants to bear sooner. Rich light soil should at this season be used, and syringing with warm clear soot water in a sunny day is good for keeping the foliage all right.

Gathered all the remainder of Chilis and Capsicums, and were sorry to throw away the plants, as they would have produced a heavy crop early next season if we could have kept them over the winter, but it was of no use thinking to find room for them. The tops of the plants and all the greenest fruit will be capital for mixing with tobacco or laurel leaves for smoking insects when they show themselves. Sowed on a slight hotbed Radishes and a sprinkling of Lettuce seeds in case anything happens to those plants out of doors. Filled a frame with nice Lettuce rather more than half grown. Took up a lot of full-grown plants and put them under the thatched roof where our first out-of-door Mushroom-bed was. In severe frost a little litter or dry hay may be laid over them. Covered up a piece more Endive, curled and plain, with boards, slates, pieces of old tan, and then a slight covering with leaves, to give a large supply in a fortnight. Took up also a good lot of fine-grown plants with good balls from a bank, and turned them in close together on a border made into an earth pit, watering them at the bottom and putting dry earth on the top. Here we can shelter from much wet, protect from frost, give full air when fine, and just cover up a little piece for blanching as needed. The great enemy in such a place has been mice—both house and field or grass mice. Who will tell how to destroy whole flocks of the latter in the best manner without exposing any other animals to risk from poison?

Took up as many roots of Asparagus as filled one light of a frame closely packed, and will fill the other light in a week or two as the ground gets drier. Cut down the Asparagus-stems after gathering a lot of seed, chopping it at two or three times with an old scythe, as that and everything else that will heat must go into the fermenting-heap. We must use the whole of the beds in the flower garden for the same purpose. Such things as *Calceolaria amplexicaulis*, *Salvia fulgens*, &c., are all the better of being thus chopped over, so that the length shall not exceed a foot. All these Verbenas, &c., from beds, when mixed with leaves, sweepings of grass, and a little dung, make a very nice fermenting-heap. Perhaps the least valuable for this purpose are frosted Dahlias-stems, but even they are better than nothing. We depend much on a few tree leaves, and we wish now we had collected a few before the late tremendous winds, as in our high place they have mostly been carried away to enrich the farm fields in the valleys. It is important, however, that the stems of these flowering-plants, Asparagus, &c., should not be too long. We recollect when a heap was turned and some Holly-hock-stems, &c., had been used rather long, a stout young chap grumbling sadly, said, "That it was only to annoy he." As soon as the frosty nights showed themselves, we removed a number of barrowloads of Cauliflowers with heads nice and compact, about the size of a good fist, and placed them in the shed where we had put some the other week, and also the Lettuces mentioned above. We did not trouble much with balls in their case, but stuck the roots in the dung of the Mushroom-beds, watered them, and then trod the material of the bed firmly about them, and leaving only a few of the top leaves, as these will protect from frost. These we had partly protected previously by placing some of their own larger leaves over them; but after such rains very little frost injures them. A younger lot we will try and lift ere long with balls, and place under the protection of old sashes or straw covers. Wood covers, moveable, or that could be tilted-up on fine days, would be the best. Pricked-out also a lot of young Cauliflowers in a frame, in case those under hand-lights, &c., should fail. Put a few scores also in small pots. They came after repotting very early last season.

FRUIT GARDEN.

The ground has been too wet to proceed with pruning. We had some straw ready to lay over Strawberry pots if the weather should be at all severe, as we have not yet put them under protection, but will try and make room for

them in the orchard-house, or under old sashes or moveable covers. When plunged in leaves laid on the surface, and a few leaves over the pots, they will stand almost any frost if the soil is dryish. Their own leaves will also help them. For this purpose we never take off a leaf until we begin to put them in for forcing. Long practice has convinced us that if the pots are very wet and much frosted in winter, the flower-buds are apt to suffer. Packed a lot more on their sides against the back wall of a pit, laying the first layer on their broadsides and three to six layers above them, which will tend to keep them dry and also arrest growth, both of which are of importance before commencing to force. We used to build them up in this way, packed in ashes, and a board along the top row, before we could obtain any other protection for them. Straw hurdles set in front of them in frosty weather kept the frost from them. In this way we seldom had any injured by mice, but we always lose a few in hard winters by these vermin, when we set the pots on the level, with a few leaves between them, whenever the winter is more than usually severe. We prefer a wall for such storing when such can be had, but we have had the plants do very well when the pots were fixed in a bed of ashes, just like a small span-roofed house or a ridge Mushroom-bed. Thus, set off a bed—say 1 yard in width—with a layer of ashes at bottom, lay down a row of pots all round with the plants to the outside, fill up the space behind the pots with ashes made firm, and bring the ashes forward to the rim of the pots, making all level and firm, and seeing that the ashes below the bottom end of the pot are sufficiently high that the top of the pot, when laid down, shall be perpendicular from bottom to top instead of sloping, for that would let in the rain, whilst we want to keep them dry. Proceed with the second layer, so that the rims of the pots are 1 inch behind the rim of the first layer, and so on to as many layers as you can put on, and cover the top with ashes, litter, and a board. It is easy protecting such a ridge with litter when necessary. The pots will rarely be too dry all winter. The ridge should be broken down about the middle of March, and the pots set on their bottoms as, if they remained in the ridge on their sides, and the weather were fine after that time, the plants would grow one-sided. Some such arrangement will be useful to many amateurs, as they may rest assured that the frequent want of success is greatly owing to the plants standing in pots above the ground in all weathers, in winter. If the pots were even plunged, and a few leaves or some litter strewed over the surface, it would be a great improvement to standing them on the open ground. In the latter case the roots and crown are often exposed to such a low temperature as the plants would never experience if planted or plunged in the ground.

Picked out a few berries from Grapes that had signs of damping. On the whole they are keeping very well, but the floor of the house is not so dry as it ought to have been, owing to plants remaining rather long in it. Moved stove plants from vinery, pruned it, washed Vines, lime-washed walls, stages, &c., and will fill at once with bedding plants that are most likely to suffer from damp—as things that have been growing at all freely, though they may be kept from frost by covering, will not stand a confined damp atmosphere. Watered Vines in pit with manure water, heated to about 90°, and damped the stems a little. Manure water in evaporating-pans is the best substitute for a heap of fermenting dung in breaking Vines, &c.

ORNAMENTAL DEPARTMENT.

Placed peat and loam over furnaces to heat for top-dressing and repotting Ferns, stove plants, and fresh-casing baskets of Orchids. All stove plants are now kept rather cool and dry except those in and showing bloom. Not the best time for potting anything, but the little place being in course of repair and alteration, the plants have been squeezed in anywhere, and will need kind treatment to re-invigorate them. Used little water in conservatory, unless for Chrysanthemums, Cinerarias, &c. Hardwooded plants should have plenty of light and air. It is annoying to find the floor sailed from a watering-pot as in the dog days. Put a little fire on, to have all ready and in good order in case of a sudden frost, and have had all furnaces, flues, and chimneys looked at. After so much wet there is likely to be damp everywhere, and a brisk fire will dry all up and

make it fit for use. In long flues, with several turns, in a wall, we have had before now to pull out a smoke-plate some 20 or 30 feet from the furnace and put a bundle of shavings on fire there, to give a good draught and prevent our being smothered at the stokehole. By the way, there were lately some very sensible remarks on managing furnaces and regulating draught by the ashpit doors; but the mischief is, you would require to have the eyes of Argus and feet that never weary, to keep such doors in order under the generality of stokers. Moved lots of Verbena cuttings and things of that sort where we could keep them drier. For Calceolarias and things of that kind a little damp does no harm. We are almost sorry that our Calceolaria cuttings in the pit are striking and pushing out roots. We should have liked it as well if they had not done so until after Christmas. They must have every bit of air that they can stand to keep them back, as they are so thick, and as yet scarcely one has done badly out of many thousands. We do not think we shall be able to thin them before March.

In answer to an "INQUIRER," we would say that if you can give no dry heat, the worst place in which you can preserve Verbenas, Petunias, Lobelias, and plants of that sort is an old hotbed frame. The damp rising from the dung, and from rain soaking into the dung, will be a constant annoyance. The frame set on dry ground would be worth a dozen of the old damp hotbed. A few of the earliest potted bulbs will now be fit for forcing in a mild heat. The rest must be kept from frost, whether for pots or the flower garden. Auriculas and Polyanthus of choice kinds should now be plunged in a cold pit or frame, and plenty of air given in fine days, and air back and front at all times, except when very frosty. They will need no covering unless the weather be very severe. Pinks not planted out, Carnations, Wallflowers, and early Stocks, Ten-week, Intermediate, or Brompton, had better be under protection for the winter. Tree Carnations will now be coming into bloom, and if well rooted will stand a little manure water. As already indicated, we have cleared a few beds in the flower garden for our fermenting-heap, chiefly in frosty mornings, as the lawn is very wet, and we do not care to thoroughly sweep the lawn until most of the leaves have fallen, which they will have done by the next frost. We will, if possible, take our Dahlias up this week. It is well to cut them rather high—say from 6 to 9 inches from the tubers—and lay them with the stems downwards in a dry place for a week. Then we place the roots in dry earth in a shed, and rarely lose one. The same earth has served for a number of years.—R. F.

COVENT GARDEN MARKET.—Nov. 14.

The market continues well stocked with all kinds of fruit and vegetables in season. Hothouse Grapes are both good and plentiful, especially Black Hamburgs. The supply of Pines is very abundant, but for those of the best quality prices have not retrograded. The best dessert Apples consist of Ribston Pippin, Cox's Orange Pippin, King of the Pippins, and Golden Reinette. In Pears, Glou Morcean, Chaumontel, Winter Nellis, and Passe Colmar are the leading kinds. The best Cobs maintain the prices previously quoted, 65s. to 70s. per 100 lbs. Cut flowers are the same as last week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	1	6 to 4	Mulberries.....	quart	0	6 to 0	0
Apricots.....	doz.	0	0	0	Oranges.....	100	0	0	12
Figs.....	doz.	0	0	0	Peaches.....	doz.	0	0	0
Filberts & Nuts 100 lbs.	55	0	75	0	Pears.....	bush.	7	0	10
Grapes, Hamburgs, lb.	1	6	5	0	dessert.....	½	sieve	2	6
Hambro's, Foreign	0	9	1	6	Pine Apples.....	lb.	3	0	0
Muscats.....	3	0	6	0	Plums.....	½	sieve	0	0
Lemons.....	100	8	0	12	Quinces.....	doz.	1	0	2
Melons.....	each	2	6	4	Walnuts.....	bush.	14	6	20

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Beans, Broad.....	bush.	0	0	to 0	0	Leeks.....	bunch	0	3 to 0
Kidney.....	½ sieve	0	0	0	0	Lettuce.....	score	2	0
Beet, red.....	doz.	1	0	1	6	Mushrooms.....	pottle	1	0
Broccoli.....	bundle	0	9	2	0	Mustd. & Cress, punnet		2	0
Cabbage.....	doz.	0	9	1	3	Onions.....	bushel	3	0
Capicums.....	100	1	3	2	0	pickling.....	quart	0	6
Carrots.....	bunch	0	6	0	8	Parley.....	bunch	0	3
Cauliflower.....	doz.	2	6	4	0	Parsnips.....	doz.	0	6
Celery.....	bundle	1	6	2	0	Peas.....	bush.	0	0
Cucumbers.....	doz.	6	0	12	0	Potatoes.....	sack	5	0
pickling.....	doz.	0	0	0	0	Radishes doz. bunches	1	6	2
Endive.....	score	1	3	2	6	Rhubarb.....	bundle	0	0
Fennel.....	bunch	0	3	0	0	Savoy.....	per doz.	0	1
Garlic and Shallots, lb.	0	8	0	0	0	Sea-kale.....	basket	3	0
Gourds & Pumpk., each	0	0	0	0	0	Spinach.....	sieve	1	6
Herbs.....	bunch	0	3	0	0	Tomatoes.....	½ sieve	2	6
Horseradish... bundle	1	6	4	0	0	Turnips.....	bunch	0	3

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

PRUNING PILLAR ROSES (T. G.).—Roses grown as pillar or climbing roses require to be pruned on a different principle altogether from standards. For a pillar we shall presume that the plant has five shoots. Select the strongest and cut it back half its length, the next strongest two-thirds of its length, and the remainder are to be pruned to four eyes each. The leader will push some five eyes, the uppermost of which is to be trained to the pillar, the remaining four shoots being also tied if there is any danger of their becoming broken in a gale. The shoots made by the leader are to be pruned precisely in the same manner as in the previous season, and all below pruned to four eyes, and so on year after year until the pillar is covered, when the shoots are pruned to four eyes from top to bottom. If they are to be trained against a trellis or wall select the two strongest shoots, and bring these down towards the bottom, and having cut them back half their length, nail or tie at about 1 foot from the bottom, letting the shoot rise from the stem 1 foot in a yard distance. Take the two next strongest and cut them back two-thirds of their length. These are to be trained about 1 inch above the other shoots. The remainder being equally distributed towards the centre, and three shoots are ample to cover or fill the entire, cut two to six eyes, and the centre shoot to four. The season following the shoots on the old wood are to be cut to two eyes, and the leaders of all the branches to half their length, except those in the centre, which are to be pruned to two-thirds the length of each. Proceed in this way until the allotted space is covered, when closer pruning is requisite for the whole. You will attend to the cutting out of an old branch in after years, and supplying a young one in its place, taking such shoots from the base of the plant. Out of those you named you will prune *Brennus* and *Hoire de Dijon* less than the *Hybrid Perpetua*.

TRANSPLANTING ROSE TREES (Idem).—You may move the budded roses over, the sooner the better; but do not cut off the part above the bud until the beginning of March.

PAMPAS GRASS NOT FLOWERING (Idem).—The Pampas Grass is evidently suffering from want of moisture at the root. You will do well to add some strong clayey loam to the soil about the plant, and water copiously with weak liquid manure twice weekly in droughty weather. We think your plant would then not only flower but be very fine, amply rewarding you in its time for the labour bestowed. *River's Rose Catalogue* will meet your wishes.

PROTECTING YUCCA FILAMENTOSA (A Cottager in the West).—If you have the plant out the best thing would be a hood of mat or calico, or urvas made waterproof, to set over the plant every night, and to keep it a if the weather should be frosty during the day. The plant is hardy, but frost will injure the flowers if severe. If you are very anxious the plant could be raised carefully with a ball and placed in a tub or pot, and set indoors until the blooming was over. We presume the dry summer has caused it to bloom so late. The same crown will not flower again, but fresh crowns will bloom when strong enough.

HEATING PIT FOR BEDDING PLANTS (A. A.).—You would see an answer a correspondent last week how that could be done by taking a fine under-pipe with a chamber over, and openings to let the heat up. A small fire the side would answer the same purpose. All could be saved without artificial heat, if covering up from frost is attended to, in frames set on raised ground, banked up all round, the outside coated with tar and sand, id for a yard or 4 feet all round to send off the water. For single frames, say one or two lights each, earthenware gallon bottles filled with hot water would be serviceable. For a number of them the cheapest thing would be small furnace, a yard or 2 yards of brick flue, and then common drains about 7 or 8 inches in diameter, and to be used only in damp or frosty rather.

PLANTS BUT NO GREENHOUSE (Economy).—Your best plan would be to have a spare room for your plants. Such a contrivance as you speak of, covered with oiled paper, would do from the middle of April to the middle October, but you must keep the wind out even then. Calico glazed or tinted with dried oil and a little bees-wax melted in it would be better, and well tacked to the wood would last some time. You are just the sort of person to have a small greenhouse, fixed roof, wooden ventilators at the front and back, and glazed with glass at 2d. per foot, warmed by a brick stove to keep out the frost. Rafter sash-bars 3 inches deep would for 160s. glass if the house were not more than 6 or 7 feet wide, and it in a few years would be cheaper than your temporary paper frames, rough with these many good plants have been grown. Command us if we can do anything for you.

WOUNDS ON TANNERS' BARK (A Novice).—It is not injurious to plants; it is unsightly, and may be destroyed by frequently stirring the surface.

GARDENS WORTH VISITING (R. H.).—All those omitted from your list had been published by us previously, as you will see if you refer to some of our Numbers.

FASTIDIUM [TROPÆOLUM] (A Lady Subscriber).—It is impossible to give the value of a *Nasturtium* from a single crushed bloom. Everything depends on habit and on the colour of the fresh flower.

WINTER DONAX CULTURE (R. Powles).—We should prefer the south-east side. It requires nothing beyond common soil to grow in, and does best near water, so that its roots may feel the benefit of it.

SURFACE OF PIPING REQUIRED (T. H. J.).—Your first letter was destroyed long ago. If we kept MSS. we should require no end of warehouse-room, so we cannot say anything about the *Arnott's* boiler. You had better repeat the question. Your two four-inch pipes for ainery 30 feet by 9 will not be sufficient for early Grapes nor yet early Cucumbers. You would need, at least, one pipe more all round the ends and front. If you took the two pipes all round the back as well as front and ends that would be sufficient. You say nothing how you propose arranging.

LONG SHOOT OF BANKSIAN ROSE (H. G. M.).—Cut it back half its length and bend the upper part of the remaining half down, to induce the eyes to break from the bottom and all along the branch. If nailed-in now it will only break a few eyes at the top. After the shoots are a few inches in length it should be nailed to the wall.

VARNISHING CALICO (Idem).—To render this a substitute for glass, use linseed oil one quart, acetate of lead one ounce, white resin three ounces. Grind the lead with a little of the oil on a stone slab; add the remainder of the oil and the resin, and incorporate thoroughly in a large iron pot over a slow fire. Apply whilst hot to the calico stretched loosely, by means of tacks upon the frame. When cold it is fit for use, and may be tacked on the frame tightly, putting a piece of tape between the tacks' heads and the calico. The composition should be applied with a brush.

WINTERING CALADIUMS (George Linn).—When the roots are kept dust dry they are apt to become farinaceous, and though hard and apparently plump and sound when potted in the spring, they not unfrequently rot on water being applied or on placing them in moist soil. We should place them on the floor under the stage, and if it is rather moist the pots will absorb moisture enough to keep the roots at rest still fresh. Do not water now, but place them on a moist floor under the stage of the stove, being careful that water does not drip from the pots above and make the soil in the pots sodden.

ASALEAS INFESTED WITH THRIPS (Idem).—We told you before how to kill thrips on Ferns, and we can only repeat:—Smoke strongly two nights in succession, and syringe the plants the morning following each operation. Gishurst compound at the rate of 4 ozs. to the gallon of soft water, is an effectual remedy for thrips, but it should be washed off with the syringe twelve hours after it is applied.

SEEDLING RHODODENDRONS DECAYING (S. B. O.).—Your seedling Rhododendrons are, we fear, standing too close together, and in a soil the reverse of sweet, or in that which is rendered sour by stagnant water. Perhaps you are using the old soil in which seedlings have been grown before. Any of these causes will produce the disease known to gardeners as "damp." Irrespective of these causes there are changes continually going on in the atmosphere which produce those diseases of fungoid origin which puzzle even the most experienced. The disease is brought on by a deficiency of one or more of the elements, aerial or terrestrial, necessary to the proper constructing of the plant's several parts, but what that deficiency is remains, and we fear will for some time be one of the problems that science fails to solve. We know of no remedy but exposing the plants to the full influence of air by taking off the lights, and stirring the surface soil, and thus making all sweet about them. Self-sown plants, we may add, never go off in the way yours are doing, and this we think is owing to their receiving thorough exposure to the air, which secures the opposite of drawn, imperfect-structured plants, such as too often result from artificial rearing.

CONSERVATORY ROSES NOT BLOOMING (J. J. J.).—You do not say what kind of roses yours are. There is, however, but one mode of treatment, so far as potting is concerned, necessary for them. They should be potted in September, and plunged in ashes in a cold frame. Air is to be given by taking off the lights in mild weather, letting the plants have the benefit of gentle rains; but putting on the lights during dreary rains, and to shield them from frost. In November the plants should be pruned. Teas and Chinas require but little pruning, merely taking out the wood that has produced flowers, and shortening the shoots retained. Perpetuals require pruning to two or at the most to four eyes; Bourbon, Moss, and Provence must be pruned moderately. The beginning of February is early enough to introduce them into the conservatory, where they should be placed in the coolest part for a fortnight, sprinkled morning and evening with tepid water, and copiously supplied with water at the root. They may then be placed in the warmest part, if not above 50°, where, with abundant ventilation and light, they will flower in due season. Return them to the garden in summer, plunging them in ashes until September, when you will pot them and place in the cold frame as before. As your plants are now in the conservatory, prune them at once, and keep them as cool as possible, and rather dry at the root, until Christmas. After that water more freely, and bedew the plants overhead morning and evening with the syringe. Give all the air and light practicable, and be careful not to let them want for water at the root.

DOUBLE PETUNIAS CULTURE (Idem).—Take out greater part of the old wood, cutting this year's blooming-shoots clean out, leaving nothing but young wood to grow and bloom another season. They require to be kept moderately dry during the winter, and in a cool and dry atmosphere with a temperature of from 35° to 40°.

USE OF A SPARE ROOM TANK-HEATED (M. B. T.).—You might force Asparagus, Rhubarb, and Sea-kale in your spare room; or, if you could obtain some horse-droppings, sufficient to make a bed 6 inches thick, you could have a crop of Mushrooms. In January you could sow Cucumbers, and have some nice fruit in April; and in March you might sow some Melon seed, grow on in pots, and plant out in May, and these would give you some fine Melons in August. Or you might have some Vines in pots plunged in the soil, and train the canes to the roof, about 1 foot from the glass; keep them there until the fruit change colour, when they will be none the worse by being removed to a drier atmosphere to ripen. Last, but not least, it is just the sort of place wherein to place any sickly plant, and, if you could lower the temperature, to bring forward such things as bulbs, Roses, *Dicentra*, *Dentaria*, *Rhododendrons*, and *Asaleas*. These are a few of the uses to which the space might advantageously be employed, and to them we think you might add many more.

PRICED CATALOGUES OF FRUIT TREES (H. Hawkins).—We have no such publication. You had better write for them to some of the chief nurserymen.

SUPPLEMENT TO COTTAGE GARDENERS' DICTIONARY (Isora).—No supplement has hitherto been published, but one is now ready and will soon go to press.

CONVERTING A GREENHOUSE INTO A VINERY (Zig).—Our friends who wish for an answer to questions in next week's impression should let us have their questions in the beginning of the week. You very modestly propose two questions, but these involve ever so many, and a full answer to them would need a whole Number of this Journal. Most of them have recently been discussed in detail, so we must be brief. We should have fully comprehended your span-roofed greenhouse, facing east and west, 30 feet by 17, if you had given us the height at sides and the height of the ridge-board. The height at the sides, wall and glass, would have given us the key-note for the forming of your borders for Vines. Glass in squares, twenty-one ounce, and in such large squares as 20 by 18 inches, should have brads at their lower ends at any rate, besides the putty to keep them from slipping. A brad in the middle of the square in such a case, with a slice of india-rubber beneath it, would make all more safe, especially if the rebates are very shallow. If at all deep, they will not be needed. There are plenty of offices which insure glass houses against injury from hailstorms, &c.; but we cannot take upon us to recommend any office in preference to another. A gravelly and sandy soil, if the two first are in excess, will not grow Vines successfully; but if deep and open it may be enriched with manure and loam, and some chalk or lime rubbish and a few bones. If the gravel and sand are unhealthy to vegetation, some of the cleanest gravel and sand should be used with lime, in the proportion of six parts of the former to one of the latter, to make a concrete bottom of 3 inches, and on that place good fresh loam for the Vines. If other things grow well in your sandy gravelly soil, the Vines will also do well with the addition of a little loam and manure, the latter chiefly as top-dressing. For making borders, see notes on Keele Hall, and notice of Trentham at page 374; but if you merely wish for late Grapes, and the soil is at all favourable and no chance of stagnant water, you may add a little fresh soil merely on the top of the old, mixed or not mixed with it, as you will shortly see was done by Mr. Lane at Berkhamstead. In general cases the preparatory mode will be found the best in the end. We prefer the Vines to be planted inside, and would have the roots to run there as well as outside. The outside border might be from 8 to 10 feet wide. You might have eight Vines on each side if you chiefly wished for Vines; and if you wished these to be forced early, or to have little forcing at all, but to be ripe and cleared off in the autumn—say by the middle of October—then nothing would be better than Buckland Sweetwater, Royal Muscadine, and different varieties of Black Hamburg. You might also add a plant of Hamburg Muscat and Muscat of Alexandria. If you wished the Grapes to come in late and hang during part of the winter on to the spring, then to the above add the Trebbiano, Charlesworth Tokay, and Lady Downes' Black. If you propose growing fruit trees in such a house, there will be no difficulty; but the five Vines on each side would be enough, and you make your house a fruit-house and not a greenhouse. A good arrangement for such a house would be a bed in the middle 7 feet wide, the path round 2½ feet, side borders 2½ feet. Any small saddle-back or conical boiler would do for such a house, increasing the size according to what you want from it. It would be placed best at the end of the house, next the range of pits to be heated. We have frequently described how different places may be easily heated from the same boiler. The quantity of piping would depend on the heat Grapes were wanted, and two four-inch pipes all round would be ample for general purposes, and these could be placed side by side on the side and end borders, avoiding the doorways. For very early forcing a third pipe would be necessary, or a couple of pipes might go under the central bed, with clinkers or stones round, and then earth or other matter to set the pots in. The top spit from a pasture—or rather 3 inches of it piled in a heap for a few months, with layers of branches in it to let the air through it—would be in capital order to be chopped roughly down in six months. Any fresh soil beneath turf, or from a roadside, may be used at once if you deem such fresh soil necessary, and certainly it is safest. The great thing is to avoid stagnant water and the roots getting too deep. The time of planting is immaterial. If planted now and well mulched the roots will begin to make fresh fibres at once. If planted in March and a little heated soil is used and warmed water also, they will soon start away. If you can grow the Vines inside until June, you can plant out then and shade a little to prevent a check. In every case the roots should be carefully spread out. Perhaps the best plan of all, if it could be done, for quick work, would be to turn out the roots in spring carefully into shallow baskets some 2½ to 3 feet in diameter. Grow them inside a warm house and then plant out in fine aired soil in June, planting basket and all together. Planting inside, however, you may do it any time when the ground is ready. With Vines thinly on the roof, the plants in pots will do very well.

TRANSPLANTING PEACHES, APRICOTS, &c. (Idem).—There need be no hesitation in moving these trees, eight or ten years old, from one garden wall to another, and the sooner it is done before the ground is cooled the better. Prepare the ground where the trees are to be planted, unfasten the trees and fasten the branches in bundles so as not to be broken. Then dig down a deep trench near to where you may expect the extremities of the roots to be, and pick down and throw out the soil in the face of the trench, saving every root that comes in your way, and thus go on until you get up to the tree, wrapping the roots, if the weather is at all dry or sunny, in damp mats. Carry the tree with all its roots thus secured to the new place, and pack the roots nicely in the fresh soil, and the bulk of them to be 6 or 8 inches from the surface. Light sandy soil will be the best to pack them in, and then place the other soil over and fasten down moderately, and place a good layer of litter over the soil to keep the frost out. Most likely if thus managed the trees will be improved by the moving. But in order to give them a first-rate chance, whilst these means are used to encourage root-action, keep the shoots from the wall as long as possible that they may be kept from swelling their buds too soon.

ASPARAGUS-BED-MAKING (A Reader, Bingley).—If the soil is light, loam, and deep, 6 inches of well-rotted manure, worked-in in trenching the ground 3 feet deep, is a good preparation, the beds being made 5 feet wide, with two-foot alleys between. In very cold heavy soils it is advisable to take out the soil to the depth of 3 feet, and fill in 6 inches thick of charred turf at the bottom, then 6 inches of manure, 3 inches of river sand, and next, then more turf, or moderately light, good-bodied soil, manure, and sand, until the whole is raised level with the surface. Having an evening at one end, turn the whole over, mixing it well together; and when that is done, throw out the alleys 1 foot deep and 2 feet wide over the beds in each side, which should be 5 feet wide. The ground being well-drained

PAPER DRAPEY (Paper Drapery).—We cannot find such an advertisement in our columns.

Pronunciation of CYCLAMEN (A Subscriber).—It is pronounced as I spell Sisk-lamen.

ASH-BARK FOR EPILEPSY (Charlotte).—The bark of the female Ash-tree (*Fraxinus excelsior*)—that is, a tree bearing fertile keys, differs in no known quality from the bark of the male, or non-seed-bearing tree. Some Ash trees bear both fertile and unfertile flowers.

OUTVIRANDRA FINESTRALIS CULTURE (Anxious Inquirer).—Your treatment is right, except that you are ignorant of the grand secret in growing it—“Keeping the leaves free from dirt, and all about it sweet.” A successful cultivator furnishes us with the following particulars of its cultivation:—“It requires a temperature of from 70° to 75°. Broad glass pans are most suitable for it, as they allow of the structure of the leaves being perfectly visible from the light transmitted through the sides. The compost consists of fibry peat with a little rotten turf. This is put at the bottom of the pan to the depth of 3 inches, and is covered with half-an-inch of river sand. The sand is to prevent the water becoming discoloured or dirty when the plant is syringed. It is watered with the syringe every morning, taking care to use water of the same temperature as that in which the plant is growing. This syringing frees the leaves of any sediment that might adhere to them, and prevents green algal moss forming in the water. The sides of the glass require rubbing occasionally to keep them clean. Early in spring the soil is renewed, as the leaves begin growing smaller and weaker when the soil stops in too long. The soil is only changed once a year.” You did quite right to report the plant when you found it was not doing well, as that, it seems, is one of the main points to be attended to.

PLANTS FOR A SHADED CONSERVATORY BORDER (F. N.).—Ferns are more adapted for such a border than Heath, which require, and must have, sun, light, and air. The various multicoloured and elegant varieties of the British species of Ferns would be charming in such a place, grown in pots or planted out. We know of no flowering plants that would do in such a place as that you name.

CAREPERS FOR CONSERVATORY PORCH (Idem).—Those you name would do very well. *Wistaria sinensis* is a handsome fast-growing plant, and so is *Clematis lanuginosa*, the former flowering in spring and the other during the summer. Of evergreens there are *Caprifolium japonicum*, sempervirens, and Youngii; *Lonicera brachypoda* and *flexuosa*; and *Jasminum revolutum* and *Wallichianum*. *Magnolia grandiflora*, and *Crataegus crenulata*, *Fyrcantha*, and its variety *fructu-albo*, are handsome evergreens.

EARLY-FLOWERING ANNUALS (Agnes).—Sweet Alyssum; Campanula Lorei; Clarkia pulchella var. Tom Thumb; C. pulchella and alba; Gila bicolor and tricolor; Eucharidium grandiflorum; Gypsophila muralis; Collinsia atrovirens, bicolor, bartoniaefolia, and bartoniaefolia alba; Eschscholtzia californica, and crocea alba; Silene pendula and alba; Limnethes grandiflora and alba; Lupinus nanus and nanus albus; Nemophila insignis maculata; Nolana atriplicifolia, alba, and paradoxa; Venus's Looking-glass; Leptosiphon aureus and densiflorus; Candytuft; and Erysimum Peroffskianum. These, with many more, bloom early. March is the best time to move them, though we have found very little difference between those moved in October or the beginning of November, and those transplanted in March. The grand secret is to lift them with balls, and to disturb the roots as little as possible. All transplant well with balls of earth attached to them.

HIPPASTRUM XQUESTRE (A Subscriber since 1856).—It is an evergreen from the West Indies. Your treatment is quite right so far; but you should have gradually withheld water from the beginning of October, but not so much as to suddenly cause the leaves to turn yellow. Place on a shelf in the stove, allow them all the sun and light practicable, and give very little water during the winter—that is, from November until the beginning of March. It is not necessary to put them to rest by drying-off the bulbs, as that destroys the roots in the pots, which are certain to weaken the bulbs. Cleopatra and many others do not die down unless compelled by withholding water. We do not recommend that plan, but recommend the roots to be kept dry for a period of three months at the duldest time of the year, and to give them more sun, light, and air, at that period than any other, and a corresponding dryness. You are quite right in giving them plentiful nourishment after flowering; in fact they cannot be encouraged too much for three months after flowering, or until the foliage attains its full size. After that time water should be gradually withheld, so that they will need very little indeed during the winter. We will attend to your other inquiries.

WINTERING PELARGONIUMS AND YOUNG HELIOTROPES IN A ROOM (An Old Subscriber).—The plants you have managed to strike out of doors, and establish in four-inch pots, will no doubt succeed well under the same care as that which has brought them thus far. A room is a very good place to keep such things, provided there be plenty of light, and the plants be placed near the window. Pelargoniums are quite as hardy as bedding Geraniums of the scarlet or similar breeds, and will endure quite as rough usage; but there is a wide difference between wintering plants for the flower garden and preparing tidy plants for keeping in pots to flower. In the latter case aice-shaped plants are required; in the other, shape and symmetry are of little moment. However, by giving the best places to those plants which are required for retaining in pots, they will be better shaped; but you can hardly expect to compete with those having better means. Your Heliotropes will keep very well if you do not give them too much water. Perhaps, however, the foliage may become a little discoloured during the short days, but they will grow well enough afterwards, and afford cuttings to propagate from in April, when they root freely. If the room they are growing in be not too dry, we do not think bell-glasses will be wanted, excepting for plants not sufficiently rooted. You are perfectly right, however, in trying such experiments, and we hope to hear from you again. Perhaps the next time you will favour us with the result of your experiments in some department that will be adaptable to other of our readers.

NAMES OF FRUIT (T. A., Darlington).—It has now “come to your turn.” 3, Pame Colmar; 4, Swan's Egg (1); 5, Uvedale's St. Germain; 6, Nouveau Potteau; 7, Flemish Beauty; 8, Visar of Winkfield; 9, Chamois; 10, Comte de Lamy; 11, Shepherd's Seedling; 12, Bedfordshire Farming; 13, White Costing; 14, Trumpington; 15, Court of Wink; 16, King's Pippins; 17, Dunelm's Seedling. Others not identified. (An Old Subscriber.)—Pame.—2, Nouveau Potteau; 3, White Beauty; 4, Swan's Egg (2); 5, Uvedale's St. Germain; 6, Nouveau Potteau; 7, Flemish Beauty; 8, Visar of Winkfield; 9, Chamois; 10, Comte de Lamy; 11, Shepherd's Seedling; 12, Bedfordshire Farming; 13, White Costing; 14, Trumpington; 15, Court of Wink; 16, King's Pippins; 17, Dunelm's Seedling.

Apples.—1, Lemon Pippin; 3, Red-dick's Nonpareil; 5, Striped Queensing. Others unknown. (R. B.).—4, Ashes.—12, Hawthornden. **Pears.**—2, Vear of Winkfield; 3, Forelle; 4, Ruffe Colmar. The others cannot be identified. (A Pear-Grower).—Too decayed to be identified. (T. G.).—**Pears.**—2, Beurré Langeller; 3, Crasanne; 6, Crasanne; 7, Winter Nela. **Apples.**—1, Aldriston; 2, Fearn's Pippin. Others not recognised. (R. Webb, Colcot). The high-coloured Pear is Beurré Clairgean, and the greenish-yellow one is Conseiller de la Cour. Very fine indeed. The baking Pear is Winter Franc Réal. The Pears Croft Castle and Wormaley Grange were delicious. The two nuts Webb's Cob Filbert and Thin-shelled Deviana are, perhaps, the largest and best we have seen.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us such a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (R. S.).—1, Thuja tatarica; 2, Thuja Mensicelli; 3, Biota orientalis gracilis; 4, Thuja plicata. (Zeta, Red Hill).—1, Funkia albo-marginata; 2, Thuja pendula; 3, Cupressus sempervirens. (A Subscriber). Doubtless a Callistachys; but we cannot determine the species without sending another flowering specimen. Send us a flowering sprig in a little damp moss. (J. C.).—Your Ferns are—1, Lastrea Filix-mas; 2, L. dilatata. (Miss Walsh).—Your bulb is Nerine undulata.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

ABOUT MANY THINGS.

"AN EXHIBITOR IN A SMALL WAY," pours out his griefs in a recent Number of your Journal, and seems to imply a want of fairness in the management of poultry shows. I am also an exhibitor in a small way, and I have had my share of disappointment both in prizes and in sales; but I cannot agree with your correspondent altogether. There are many mistakes—there is occasional unfairness: I do not see how these things are to be avoided. There is, on the other hand, a natural disposition in exhibitors to grumble at want of success, and to have an impression that their own pens must be the best.

Supposing unfairness or carelessness on the part of judges and others at shows, there is a remedy in the hand of every exhibitor, which I mean to use vigorously as soon as I come across too glaring a mistake or the shadow of dishonesty. The awards cannot be altered, but the shortcomings of judges and of officials can be posted in the newspapers, and nothing would more shake the system of prizes and sales at shows than a suspicion of dishonesty or carelessness. The amount of money and time expended to produce birds worthy of exhibition deserves the strictest honesty and the greatest care. I recommend exhibitors to agitate publicly every want of honesty or care, making due allowance for the difficulties that both judges and officials have to contend with, not overestimating their own stock or suffering themselves to be blinded by prejudice or disappointment.

At the recent Crystal Palace Show I failed in all that I tried for, both in prizes and in sales; but from my own observation of the Show I was perfectly satisfied. I saw mistakes there—to wit, a prize Game fowl whose legs were faulty; a prize Sebright with more than what Mr. Baily calls the "suspicion of a sickle feather." By the way, all the Sebright hens were to my mind faulty in the comb. We do not raise such birds as old Sir John's. I saw birds, very many of them as good—or so nearly so that it was hard to tell the difference—as the prize birds. I saw birds marked in the catalogue at ages which I am sure were incorrect. But I really could not find any reason for a complaint of either carelessness or dishonesty, nor do I think that small exhibitors had less chance than others. For my own birds, I must say that they received the greatest care, came back to me quickly in as good condition as I sent them, whilst I am bound to acknowledge the civility and attention of the attendants and the courteous painstaking of the Secretary.

I mean to try my luck at Birmingham with some very choice pens, and I shall be perfectly content if I am beaten by better. I cannot suppose for a moment that there will be any shelving of small exhibitors; should it be so, you will hear from me again, and I should state the unfairness in several other papers.

I do not like the rumour that the Committee of the Birmingham Show mean to confine the poultry exclusively to the poultry bay regardless of the amount of entries. Either let them close their entries or procure sufficient space. They will I am sure act fairly in this, as well as in seeing to the size of the pens for the larger varieties—a great want in former shows.

I would exhibit also at Manchester, which Show is second to none in fairness, care, and punctuality, but that I agree with another of your correspondents in objecting to the employment of people away from their homes on Christmas-day, and I do not choose to have my birds exposed to a blank day in the middle of the Exhibition, on which day a certain amount of negligence might naturally be expected. I hope that this second hint to the Manchester Committee may be taken, or that exhibitors who have not entered will withhold their entries. Exhibitors have a great power in their own hands if they use it with temper, fairness, and discretion. Small exhibitors cannot expect the success of great exhibitors, any more than small traders can hope to make the profits of large ones. The field is open to all, and shows will depend very much upon small men, who, of course, in this, as in everything form the majority. A small man who can hit hard and fight fairly, is a troublesome fellow amongst dishonest men. Honesty is the best policy, if it is not anything more; and if poultry shows are to last and be profitable, they can only be upheld by straightforwardness on both sides.

The suggestion of your correspondent that you should "set apart a column of your paper, in which your subscribers could for a small fee insert their wants, whether of buying, selling, or exchanging, without the formality of an advertisement," is a very good one; I hope you will find that you can carry it out. To this I would add, that you might publish after every great Show a list of the pens sold, their prices, names of exhibitors, prizes, &c., as a supplement to your usual account and prize list.—EGGERT.

SHEFFIELD AND HALLAMSHIRE FANCY PIGEON SOCIETY.

THE fourth annual exhibition for this year's birds was held in the large club-room of the New Inn, Shales Moor, Sheffield, on the 2nd inst.

There were more than two hundred birds shown, including old ones; but the prizes were given only for young birds of this year. In *Carriers*, Mr. Colley took first, second, and third prizes with three splendid birds, Mr. E. Brown coming in fourth. In *Pouters*, Mr. W. Taylor stood first with a Mealy cock, also fourth with another of same colour; Mr. Ashforth second with a good Blue; the third went to Mr. Smith. In *Fantails*, Mr. Smith took first and second; Mr. Taylor third and fourth. *Owls*, Mr. Wilkinson first and fourth; Mr. Benninson, second and third. *Variety Class*, Mr. H. Brown first; Mr. Ashforth second and third.

There were some very good old birds shown in *Carriers*. Mr. Colley was greatly in advance of the other members. A pair of good Duns, which took first at Collingham last week, were shown by Mr. E. Brown.

Mr. H. Brown showed some excellent *Pouters*, including Red, White, and Yellow; one of the last colour he sold for a good sum. Mr. W. Taylor, also, had some very good Blues and Mealies, and a large Mealy cock that has taken several prizes. Mr. Simpson, of Newark, brought a few good *Pouters*, also a beautiful pair of Yellow Short-faced Mottles. There were *Owls*, *Turbits*, and other sorts shown by different members of the Society.—E. B.

BRAHMA POOTRAS NOT WELL ENCOURAGED.

ALLOW me most fully to endorse the facts and opinions contained in the letter of your able correspondent "Y. B. A. Z." We all know that the most "rising" fowl of the present day is the Brahma Pootra, and yet it is equally certain that this fowl is more hardly used and more systematically discounted by the managers of shows than any other kind. Compare, for example, the treatment of the Brahma with that of the Polish fowl, which latter is so feebly represented in point of numbers at our great shows. There were only four pens of one variety and a single pen of another variety of Polish fowls at the Crystal Palace, and yet these five pens competed for precisely the same sum in prize-money as was offered to all the pens of Brahmas, twenty-four in number.

Again: in spite of what your correspondent points out,

that the Brahma brings in a better return in entrance-fees as compared with the prize-money than any other class, with but one exception, yet at Birmingham £13 only are offered to Brahmas, and just three times as much (£39) to Polanders. Such facts point unmistakeably to a revision of prize schedules.

When this takes place let it be remembered that there are two varieties of the Brahma fowl, both, according to the high authority of Mr. Baily, equally genuine, and further that one of these, the Light Brahma, excelling, in the opinion of many, its Dark rival in usefulness and beauty, boasts a large and growing number of supporters who can ill brook its practical but unjust exclusion from prize lists, owing to the paucity of prizes given in the Brahma class.

The division of the Brahmas into two separate classes is imperatively demanded both by the growing numbers of the specimens exhibited, and still more by the practical exclusion of the Light birds under the existing system.—BRAHMA POOTRA.

PREPAYING FOR POULTRY.

SEEING a letter in your paper relative to prepaying for poultry, I beg to acquaint you that in two cases that I have done so I never received any fowls, and in another case they did not answer the description given, yet the seller refused to take them back, and he having the money I could do nothing. Under these circumstances I should recommend that no prepayment for fowls be made, as the purchaser is as likely to be honest as the seller.—CONSTANT READER.

[If a purchaser buys fowls which he has never seen from a person he does not know, he voluntarily incurs a far greater amount of risk than common prudence justifies. If we were wishing to make a purchase under such circumstances, we should merely give a reference to some respectable well-known party, and stipulate with the seller that we should be at liberty to return the poultry, paying all charges if they did not suit. In a transaction of this kind both purchaser and vendor should cheerfully allow to one another the exercise of common precaution.—EDS.]

EXHIBITING POULTRY PROFITABLY.

ALLOW me to address a few lines in reply to "AN EXHIBITOR IN A SMALL WAY." The result of my experience for two years is that an exhibitor of his class may add profit to the pleasures of prize-poultry-breeding if he go the right way to work; but in this, as in all else, there is a right and a wrong way, and among so many it is natural that many should never find out the right, and give it up in disgust. There are people who have mistaken their calling, and who never should have attempted to keep poultry for any but domestic purposes. But let the right way be adopted by the right man, and I will guarantee that not only profit but very considerable profit will ensue, and such as shall be a tangible addition to a moderate income.

First we must assume that he starts with really good stock, which, if he has an eye and has friends to advise, he may pick up cheap enough by looking about; and if he intends to do it well, with a view to pleasure and gain, I advise his confining himself to getting a name for one sort only. The trouble and vexation of trying various sorts at once is to my mind a nuisance, and the confinement it entails upon the birds prevents their keeping good health and plumage, and does away with the pleasure of seeing them roam at their ease.

As a beginner, I do not consider one should expect to sell many pens at shows, however they are marked, and that must not be too low.

On the contrary, what a young hand should aim at is to land good birds, and endeavour gradually to get his name up for a certain breed. As soon as he is mentioned, or takes a prize or two, he will have a few isolated applications or stock, which let him reply to by always supplying a good bird. But this must not suffice. He must now begin gradually to invite a wider sphere of acquaintance, and by going through what he calls the formalities of "advertisement" in your journal. If he does so carefully, he will be proud to admit the great

But, then, let him beware of the "Long firm." He must make a rule not to send a single bird away without the money, unless it be to a known correspondent, or he will assuredly be victimised. Let him make a point of sending out good birds at good prices; and if he has second-rate ones to sell he should detail their chief faults to his customer, who can take them with faults at a lower price if he chooses.

If he adopt this plan he will be sure to have quite enough demand for his stock if he repeat his advertisement from time to time; and my accounts show me that a man may, when once warm in the subject, easily add a hundred or two a-year to his means fairly and honourably.—ONE WHO DOES NOT MIND THE FORMALITY OF AN ADVERTISEMENT.

THE BIRMINGHAM SHOW.

THE entries for cattle, poultry, and roots having closed, we are now in a position to speak with certainty upon the prospects of this year's Show. Of late years each succeeding Show has, either in special departments, or, as a whole, developed its growth so rapidly that it seems almost impossible that its dimensions could be included within the limits of the space comprised within the walls of Bingley Hall. The difficulty in the way of space has been met by the erection of a new gallery over a portion of the bay, adjoining that in which the poultry are exhibited. This gallery will be devoted to implements, which department last year completely overran the space set apart for it. Implements will also be exhibited on the floor space. It will be remembered that at the last annual meeting the propriety of exercising a stricter supervision of the entries in this department was discussed. (The Council, having discussed the subject, adopted the following resolution:—"That it be a recommendation to the Council in future to restrict the articles admitted for exhibition, in addition to stock and poultry, to agricultural and horticultural implements, tools, and machinery, roots, grain, and articles to be used in connection with agricultural and horticultural pursuits." To a great extent, no doubt, this resolution will meet the evil, though at first the remedy will not be complete, inasmuch as exhibitors are not required to send in a complete list of their implements, and there will be sure to be some articles creep in that do not come strictly within the prescribed regulations. The entries of cattle are fifty per cent. above the average of former years. The sheep, though somewhat fewer than last year, which, by the way, was exceptionally strong in this department, are also fifty per cent. above the average of the entries of former years. In pigs there is an increase of twenty-five per cent. The new poultry department has always been a strong feature in the Birmingham Show—indeed, one of the main features that have tended to make the Show famous. This year there is an increase of a hundred and fifty in the number of entries as compared with last year. The show of roots, though not one of the most attractive, is at all events one of the most useful departments of the Exhibition, and shows signs of healthy vigour. This year corn has been added to the roots, and the propriety of the addition is shown by the fact that there are fifty-seven entries. The new gallery to which we have referred above is intended for implements only; and to make room for the large increase in the other departments the Council have been compelled to deviate from the former planning of the Exhibition space appropriated to cattle, sheep, and pigs. The main central avenue will be slightly contracted, and down the two side avenues for cattle will be placed double rows of pens for sheep, while the space formerly occupied by the sheep will be taken up by an extra row of cattle. There will be one row of pigs in the old position, and the remainder of the pigs will be shown in the small corner bay beyond the second-class refreshment-room. An improvement has also been effected in the poultry department, by increasing the size of the pens for the Cochins and Dorkings. The following is a list of the entries, showing also the numbers last year:—

	1863.	1862.		1863.	1862.
Cattle.....	363	181	Corn.....	57	—
Sheep.....	110	110	Poultry.....	1,800	1,304
Pigs.....	70	70	Pigeons.....	275	223
Roots.....	116	116			

This and the public will be admitted on Saturday, the

28th inst., the day on which the Judges make their awards. The reason for this innovation is that some exhibitors have expressed dissatisfaction that the judging should be conducted in private, and the Council have therefore determined to give this privilege on payment of an admission fee of ten shillings. It was deemed necessary to fix the admission fee thus high, in order that the Judges might not be impeded by a throng in the performance of their arduous duties, and also not to interfere with Monday, the day of the private view. The poultry will not, however, be exhibited until the Monday.—(*Midland Counties Herald*.)

ISABEL PIGEONS.

IN reply to Mr. Brent's note in last week's JOURNAL OF HORTICULTURE, I, having bred several pairs of Isabels during the last and present year, willingly tell you all I know about them.

I purchased my first pair of Lady Winchester, and exhibited them at the Crystal Palace last December, where they took second prize. They were in moult this year, or I should have shown them again. Lady Winchester informed me she never let them rear their own young, implying that they were bad breeders; but I thought I would try them, having but little room for nurses, and the result is as above stated, I never having shifted their eggs; still I must admit it is desirable to keep them in a pen when breeding, that the young may be easily looked to, as they will sometimes neglect them, and let them die from cold with their crops full. Some will breed much better than others.

A gentleman in Glasgow whose name I forget, and with whom I exchanged a bird, told me that they are in some parts called Austrian Powters, and they certainly have some of the properties of the Powter, such as the power of filling out their crops with wind—female as well as male. They are very fond of "showing," and the young cocks very precocious, calling to nest at a very early age. They are rather smaller than Trumpeters, which they resemble about the feet and legs, being heavily feathered and vulture-hocked. Some are nearly as upright as Powters. They should be a rich cream colour with white bars on the wings (like the "Suabian" Pigeon in Mr. Easton's work). Some are too light, others too dark, but by judicious matching good coloured birds may be bred from them. They appear to fly with the greatest ease, the air in their crops no doubt sustaining them, as they are very light.—ALFRED HEATH, *Calne*.

FOUL BROOD.

I FREELY accept Mr. Lowe's explanation in the spirit in which I presume it to be tendered, but at the same time beg most emphatically to disclaim having indulged in any "ungenerous insinuations." I simply stated what Mr. Lowe himself admits to have been the fact, and I had then no means of knowing what, however, I am quite willing to believe—that the numerous misstatements of which I complained arose entirely from inadvertence and defects of memory. Such being the case, I have much pleasure in offering to shake hands over our little difference, and shall be but too glad to benefit by Mr. Lowe's able assistance in the cause of apiculture. I may add that I seek only the truth in these discussions, and am perfectly ready to abandon all or any of my opinions the moment I see cause to believe them incorrect.

Thanks also to my friend the Hampshire peacemaker, I can take a few "raps on the side" as well as any man, when the said "raps" are fairly laid on; neither am I prone to be thin-skinned if the righteous smite me friendly and reprove me; but if their precious balms break my head, may I not rub my pate and cry "hands off!" for the future?

Allowing, therefore, the dust of our skirmish to subside, let us see how the question really stands between us. Following all modern authorities on the subject and being fully borne out by my own experience, I have described foul brood as a highly contagious disease, the radical cure of which is extremely difficult and uncertain, since infection may be communicated by the combs, the honey, and the hive which has contained a diseased colony, and even by the

bees themselves so long as they retain any of the honey which they have taken with them. On the other hand, Mr. Lowe maintains, as I understand, that foul brood is no disease whatever, being merely another name for chilled brood, which he asserts is never removed by bees and consequently must remain a permanent evil in whatever hive it is unfortunately found. He therefore follows the old writers in assuring us that complete excision of the affected parts is sufficient to work an effectual cure, and condemns as unnecessary the various precautions which have been more recently advocated with the view of eradicating an infectious virus which he does not believe to exist.

I imagine that my experiment described in page 342, may have induced Mr. Lowe somewhat to modify his views with regard to chilled brood and its assumed immobility by bees; but as he seems to object to the comb being new, I may remark that the combs were also new in the case of the dozen hours' delay in a warm kitchen, which at the time he so severely reprobated, and, that I have never found bees more reluctant to expel chilled brood from old combs than from new ones.

That foul brood when fully developed is really an extremely virulent disease and by no means amenable to the old-fashioned process of simple excision, is sufficiently proved by Mr. Shearer's narrative in page 182. If, however, it be objected that in this case the excision might not have been complete, I must fall back on my own experience during the past summer, in which, I found that even driving the bees into a clean hive, furnished only with a few empty and pure combs, was insufficient of itself to effect a thorough cure, unless supplemented by three or four days of what has been called penal discipline and inanition in an intermediate-hive. Here, also, let me reply to the query with which "INQUIRER" concludes his letter in page 383. Foul brood has been submitted to microscopic investigation, and apparently with very remarkable results. I am reluctant to forestall, even in the slightest degree, the report of the gentleman who has so kindly undertaken the task, and am equally unwilling to theorise in advance of facts which are still awaiting verification; but this much I may say, that the revelations of the microscope appear to afford a clue to the means by which this pestilential disease becomes epidemic, and explain at the same time why simple excision may frequently work an apparent and occasionally even a radical cure in recent cases, whilst, where the disease is of long standing it becomes so virulent as fully to warrant the doubt expressed by Dzierzon, as to the possibility of curing it by any process that can be devised.

An instance has recently been brought under my notice by a valued correspondent in the North, which countenances the suspicion that an overwhelming quantity of chilled brood may, under exceptional circumstances, degenerate into actual foul brood, just as an ordinary cold in the human subject may occasionally, although rarely, be developed into malignant fever. This may of course be, as I am inclined to fancy it is, a mere coincidence, and the bees may have imported the infection from some unsuspected source; still I deem it right to mention it, and it may be taken for what it is worth. My own experience undoubtedly tends, as I have before stated, to negative the hypothesis that foul brood and chilled brood are in any wise identical, nor is it countenanced by the best authorities to which I have access. Unlike Mr. Lowe, I do not dismiss with a cursory glance, but on the contrary am disposed to give due weight to what authors whom I find reliable in other respects have written as the results of their own observations on the diseases of bees. Dzierzon, who stands pre-eminent as the first scientific and practical apiarian in the world, must have had the most extensive experience of a disease which he estimates to have cost him in one season the loss of five hundred colonies, and, I for one, should be slow to doubt, much less to ridicule, the conclusions of so competent and reliable an observer. On the other side of the Atlantic we have Mr. Quinby, one of the ablest of the old school of apiarians. Few can rise from a perusal of his work without the conviction that he is an honest and painstaking observer, and, speaking for myself, I cannot but deem him a competent authority upon a disease by which he has lost as many as a hundred stocks in a single year. Let me, then, recite the conclusion at which he arrives after a careful consideration of the suggestion which reached

him from various quarters that foul brood was entirely the result of chill:—"To me, the cause assigned appears inadequate to produce all the results with the larvae. After close patient observation of fifteen years, I have never yet been wholly satisfied that any one instance among my bees has been thus produced."—A DEVONSHIRE BEE-KEEPER.

POLLEN-GATHERING.

ALL the bees about here (Spalding) have been unusually active with pollen lately. I trace it to blossom of coleseed, of which there is some at no great distance. They even forsake Michaelmas Daisy, which I have observed hitherto as their most favourite plant at this season for it. The idea in the JOURNAL OF HORTICULTURE that it may be from fuchsias I consider quite erroneous: I have as many of them as most persons in my garden, but never saw a honey bee at them yet. Some of the wild bees attack them, and some bore holes in the tube below the calyx for the purpose, but the structure of the honey bee's organs renders this impossible, and it is not possible to reach the honey without so doing. I notice another thing regarding honey-bearing flowers: many which are fruitful in honey in one locality secrete next to none in some other places, to say nothing of the influence of weather.—G. F. B.—Oct. 30.

[My bees were then incessant in their attention to the fuchsias, from which they collect abundance of light-coloured pollen, and extract honey from the punctures, made, I believe, by humble bees, at the base of every flower.—A DEVONSHIRE BEE-KEEPER.]

FOUL BROOD AND LIGURIAN BEES.

I THINK I shall have little difficulty in proving to "INQUIRER's" satisfaction that he is as much mistaken in attributing foul brood to the introduction of the Ligurians, as he is in anticipating any outpourings of wrath on his head on account of the suggestion, which is after all scarcely so whimsical as that of the American who connected it with the potato disease, and declared that, "Since the potato rot commenced I have lost one-fourth of my stocks annually by this disease."

In the first place, I may repeat what I have before stated—that I have no doubt of foul brood having been first introduced into my apiary by the use of infected combs taken from defunct hives of common bees, and that it has been quite as prevalent and fatal among my black bees as among the Ligurians. Mr. George Fox's Italian stock came from my apiary, and doubtless carried the seeds of the disease with it, although of course, perfectly unknown to me at the time.

"INQUIRER" is also mistaken in believing that Dr. Bevan is silent on the subject, which is in point of fact referred to by him, although under another name. He will also find that it is noticed by Schirach, Bonner, Dunbar, and Huish, all of whom probably lived and died before the introduction of exotic bees was ever dreamt of. In America Mr. Quinby lost as many as a hundred stocks in one year from foul brood, long before the Ligurians were known on that continent; whilst in Silesia Dzierzon's apiary was reduced to ten stocks, and he estimates his loss from this malady at over five hundred colonies during 1848, just five years before he made the acquaintance of the Italian race of honey bees which he has since done so much to render popular.

In conclusion, I commend to "INQUIRER's" perusal the following appeal recently made on behalf of some unfortunate dwellers in a part of Germany, to which the Ligurians do not appear to have penetrated. It proves at any rate, that the evils of foul brood have been by no means exaggerated by A DEVONSHIRE BEE-KEEPER.

REPORT OF THE SOCIETY OF THE COTTAGE GARDENER.
The spring of the memorable summer of 1862 and the winter of 1862-63, likewise most unfavourable to them, brought our bees tolerably well through the winter. Stocks had greatly decreased in autumn, owing to the loss from rain, cold, and, especially from leaving off breeding too early.

were looking forward to the new year with apprehension; but to our great delight the blossoms of trees and rapeseed gave so much honey, that in spite of cold nights the stocks strengthened themselves visibly. In the middle of May most hives (we use Dzierzon-hives, straw hives, and wooden boxes), were filled with brood and bees. Suddenly the stocks relax in their accustomed activity—notwithstanding the rich pasture they fly but little. What is the matter? The hives are opened, and behold, we find foul brood, of which until then we knew only the name. Of one hundred maggots, three, five, ten, twenty, sometimes even ninety, had grown rotten. Most of the stocks were therefore shifted into other hives at the beginning of July. With some the fasting cure was employed, others were brought into new hives without employing it, and of others the combs were cut as far as the pure sealed honey. And what is the result up to this time? Most stocks are again diseased. There is, however, this difference, that it is no longer the maggots but the nymphs that die. With other stocks neither dead maggots nor dead nymphs are found. The brood, however, is very irregular; regularly sealed combs are scarcely to be found. It must also be remarked that most of the stocks, which were shifted into other hives swarmed out in the beginning of August. These are our sad experiences. Without advice we now stand by our stocks and see them perish, unable to help them. And what will most of our bee-keepers do when the last bee hums to them the farewell-song? They will "throw the gun into the corn."*

"In bee-books much is indeed written on foul brood, and as to what is to be done to remedy this evil; but the end of the song is almost always, "Destroy the stocks and procure new ones!" But who likes to adopt this means? Many of our bee-keepers have deprived themselves to get together the little sum required to procure their stocks; and now, destroy them!—horrible thought!

"And now, gentlemen, has no sure means been recently discovered of remedying this evil? It is the duty of man to assist his fellow man at least with advice. Do not allow so many bee-keepers any longer to pass sleepless nights and days of grief. Many a poor man loses by this disease twenty, fifty, a hundred and even two hundred thalers,† and that is much for him. Dzierzon, Von Berlepsch, Kleine and other honoured gentlemen, give us some advice if there be yet a means of clearing foul-breeding stocks.—N."

MALE WASPS.

IN one of your late Numbers you mentioned that some of the male wasps had stings: I must beg to differ in toto from this. For the last few years I have examined scores—nay, hundreds, and never yet found a male with a sting. I have often nests brought to me with scores of both males and queens in them, and have frequently caused much amusement by taking up the wasps (males of course) in my hand with the most perfect impunity, pretending they never stung me. They are so readily distinguished from the ordinary wasps by their long horns and long bodies that I have never any fear of laying hold of the "enemy," or else "was betide me." I think, therefore, you are quite mistaken in supposing that the male wasp has any sting whatever. We all know that the drone bee has not.—RYLANDS.

- * This means that they will give up bee-keeping altogether.
- † The Prussian thaler is nearly equal to 3s. sterling.

OUR LETTER BOX.

BOOK ON POULTRY (M. C.).—No book will teach you "every particular, so as to make poultry profitable." You can have "The Poultry Book for the Many" free by post from our office for eight postage stamps. That will give you all the general information. Management, economy in feeding, and the use of your own good sense will be the other chief aids to success. When any difficulty occurs you can have further information through this Journal.

DYING MOSS GREEN (O. W. D.).—We have been told that this is done by soaking perfectly dead moss in a warm solution of verdigris in distilled vinegar. Perhaps some of our readers will oblige us by decisive information on this subject.

HERON'S PLUME (L. B.).—"The feathers which constituted 'The Heron's plume,'" were the fine long depending feathers of the bird, especially those of the neck.

WEEKLY CALENDAR.

Day of Mnth Week.		NOVEMBER 24—30, 1863.			Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
					Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. s.	
24	Tu	Greenfinches flock.			47.2	32.1	38.4	11	35 47	59 43	31 3	24 6	13	13 11	323
25	W	Song Thrush sings again.			46.0	33.5	39.8	19	36 7	58 3	13 4	30 7	14	12 54	329
26	Th	Common Flat-body Moth.			47.1	33.2	40.1	19	36 7	57 3	3 5	27 8	15	12 35	330
27	F	Clematis bestica flowers.			46.7	34.5	40.6	17	40 7	56 3	56 3	17 9	16	12 16	331
28	S	Ambrosinus died, 1857. Bot.			47.9	34.2	41.6	18	41 7	55 3	55 6	0 10	17	11 56	332
29	Sun	ADVENT SUNDAY.			47.8	34.9	41.4	19	42 7	54 3	59 7	33 10	18	11 35	333
30	M	St. Andrew.			48.0	35.1	41.6	19	44 7	53 3	3 9	0 11	19	11 14	334

From observations taken near London during the last thirty-six years, the average day temperature of the week is 47.2°, and its night temperature 34.1°. The greatest heat was 60°, on the 28th, 1838; and the lowest cold, 14°, on the 30th, 1856. The greatest fall of rain was 1.21 inch.

ORCHARD-HOUSES AND PEACH-HOUSES.



HAVE occasionally observed in articles written by your contributors, describing their visits to great gardens and good gardeners, that the latter have spoken disparagingly of orchard-houses as compared with Peach-houses, and it may not generally be known that they are to a certain extent quite correct in their

opinion. The truth is that where the produce of a fruit garden is alone thought of, and not the pleasure of cultivating fruit, the orchard-house is out of place unless it be in situations where such fruits as Cherries, Pears, and Plums do not succeed on walls. In such places houses for them erected in the kitchen garden would be found of great use. In a first-class well-appointed garden, with Peach-houses and fine walls, the owner of which is either an absentee or fully engaged in political or mercantile life, knowing nothing and caring nothing for fruit-culture if his table is well supplied, an orchard-house is not wanted, and a gardener would not act with judgment in recommending one. But if a nobleman or gentleman interested in fruit-culture, and wishing for one of these most agreeable structures for a promenade, as well as the pleasure of seeing fruit in all its stages of growth, asked his gardener's advice as to the propriety of building one, he would, even if he had numerous Peach-houses, act well to promote it. The late (but one) Lord Braybrooke was the only nobleman in my experience who felt much interest in orchard-house culture. He had a large house built at Audley End somewhere about the year 1852-3, and I remember hearing from his own lips the great pleasure he had derived from it in his old age and declining health, for he seldom passed a day without a promenade in his orchard-house. I can fully understand this, for during the stormy weather we have had lately I have found my daily walk in a house 100 feet long, the thermometer at 60°, always most agreeable; for the fruit-buds of Peaches and Apricots are already commencing to swell, and one seems to picture the trees covered with their gay flowers.

With respect to the produce given by a Peach-house, the trees trained to trellises in the usual way, and an orchard-house with full-grown trees in 15 and 18-inch pots, I have the past season had a good opportunity of making some calculation. It may possibly interest some of your readers.

From one of my large houses 100 feet long and about 24 feet wide, I gathered in the past season as nearly as I could calculate about twenty bushels of Peaches, Nectarines, and Apricots from two hundred trees, some planted in the ground, but the majority in pots (some in 15 and 18-inch pots). I found on measuring the fruit

of fair-sized Peaches that twenty-five would fill a half-peck measure heaped in the usual way of measuring fruit; and that the large trees, now from ten to twelve years old and upwards, produced from four to five dozen—in round numbers a peck each. This would have given, if all the trees had been of the same age and growth, the large aggregate of fifty bushels; but many of the trees are young, and some gave only from one to two dozen each.

To amuse myself, I imagined my span-roofed house divided and formed into a lean-to house 200 feet long, carrying a trellis under the glass 10 feet wide, allowing a little space at bottom and top which the trees would not probably cover. This would give 2000 square feet of trellis. It has, I think, been stated somewhere that a square foot of wall to which a Peach tree is trained should carry twelve full-sized Peaches. This is a mistake: six full-sized Peaches are as many as can be grown on a square foot either of trellis or wall. To ascertain this without any calculation, a square foot should be formed with four pieces of deal nailed together, and then placed on a Peach tree full of fruit nailed to a wall. Six full-sized Peaches will be found to occupy the square foot, leaving only a sufficient space between each for full exposure to sun and air. We can thus easily calculate the number of Peaches (when the crop is good and regular), that a lean-to Peach-house 200 feet long, with the trees trained to a trellis should give—viz., 12,000 Peaches, amounting, when measured 50 to a peck, to 60 bushels.

We must now take a span-roofed orchard-house 100 feet long and 24 feet wide and calculate its produce. In a house of these dimensions 180 full-sized Peach trees may be cultivated, and in a large house like this trees on stems from 2 to 3 feet in height are the most eligible. If well cultivated they may, in the course of two or three years, be transferred to their permanent large-sized pots, 18 inches in diameter. They soon form fruitful round-headed trees, and bear large crops. When in full bearing each tree should give from four to five dozen of full-sized Peaches—for the sake of round numbers we will say fifty. One hundred and eighty trees will thus give forty-five bushels, or fifteen bushels less than a trellised house with the same quantity of glass. I have purposely made this low calculation. The advantages of this trellised house are the regular exposure of every fruit to the sun, and consequently a greater increase in colour, making the fruit better adapted for market; so that where they are grown for profit, or merely to supply large establishments, the trellised house is the most advantageous: therefore a good gardener who well understands the training and management of Peach trees is quite right in adhering to the system. Much labour and much skill are required in the management of a Peach-house, and there is but little pleasure in it for the amateur—a promenade under a thickly covered trellis, with the fruit only to be seen imperfectly from below, is not agreeable.

We must now consider the advantages of the orchard-

house as a mode of Peach-culture. I repeat that it is a structure eminently adapted to give much pleasure to those who love gardening, and who enter into the spirit of fruit-culture; for the trees, growing to a certain extent in their natural state without the formality of training, remind one of more favoured climates. I have, however, a strong opinion that with many persons the Peach tree trained against a wall is its natural state, so much is it associated with our gardening ideas. We walk in an orchard of Peach trees, we enjoy the blossoming season, we see every fruit, and if we have time and skill we assist our gardener by taking a few trees under our especial charge, pruning and pinching them in friendly competition with him. This is the sort of intercourse that should take place between the gardener and his employer, leading to a very happy state of things, and widely different from the old-fashioned reserve which with too many used to make a gardener fear to make his employer too wise.

As I have stated in the commencement of this article, orchard-houses are not required in first-class gardens that are favoured with a good soil and climate, and which are cultivated merely for their produce—such as the Royal Gardens, Frogmore, for instance; but in first-class gardens not so highly favoured by climate, and where Apricots, Pears, Plums, and Cherries trained to walls too often fail from the effects of spring frosts, they may be made most useful adjuncts to the kitchen garden. Mr. Thomson, of the Dalkeith Gardens, cultivates Pears in pots with great success. He has now upwards of a hundred trees in pots, and finds their fruit always excellent. So that in gardens in cool climates, where there are Peach and Nectarine houses heated in the usual manner, but where the above varieties of fruits not requiring artificial heat are wanted, strongly built but cheap houses might be erected in the kitchen garden for their culture. The finer kinds of Cherries amply repay the cultivator of them in such houses, as do Plums, and above all Apricots, for of all wall trees Apricots (the finer varieties), are the most tiresome to the gardener. It is very rare to find a wall planted with Apricot trees in a well-furnished state; for after a few years large branches die, and those left are too rigid to be bent so as to fill the vacancies: consequently the good gardener feels constant annoyance at seeing what he cannot remedy.

All this may be avoided by having a span-roofed Apricot-house: it should not be small, but 20 or 24 feet wide and 12 feet high. But few gardeners as yet know what can be done in the culture of Apricots in pots in well-ventilated houses. Pot-culture is by far the preferable mode. When planted in the borders under glass they will grow rampantly and make long shoots without blossom-buds; whereas in pots they make short-jointed shoots, which are generally full of blossom-buds. The soil they require is a tenacious loam made very firm by ramming it down when partially dry, at the time the trees are top-dressed in autumn.

It is but recently that I have been fully impressed with the agreeability and perfect success of pot-culture for Apricots. Some of my trees in 18-inch pots are ten or more years old; and those on stems from 2 to 3 feet in height are models of perfection in culture. Their heads, from their shoots having been pinched in during the summer, are round and sturdy as a pollard Oak, every shoot of last summer's growth being a mass of blossom-buds. If Apricots are cultivated in houses of the height I have mentioned entirely appropriated to their culture, I should recommend them all to be grown as low half-standards, with two to three-foot stems; they will then in the course of a few years form round heads full of health and fertility. So averse are they to having their roots disturbed, that I have known all the blossoms from a large number of trees drop off without setting their fruit, only because they were top-dressed after Christmas. For this reason I have my trees operated upon in October, and but a small quantity of the old soil—not more than 1 inches in depth—taken out.

They seem to succeed so well in a soil that is firm—I may say hard—that in places where only a sandy loam can be had, it must be rammed down most firmly; and I am not yet quite certain that the best method of treating Apricot trees in pots growing in such a soil is, not to take out the soil and top-dress in autumn, but to allow the trees to remain in the hard and dry soil, and to pinch them some

water about the middle of February if mild; and after they have blossomed and set their fruit, and when it is about the size of a small horse bean, to scrape off the surface soil an inch in depth, so as not to disturb the young fibrous roots, and give them a rich surface-dressing, to be repeated during the summer as soon as it has subsided by the watering. This method was fully carried out here the past season, and nothing could be more satisfactory. My Apricots were abundant and most delicious. Writing of watering reminds me that it has been made to a certain extent the bugbear of the pot-culture of fruit trees. If every cultivator would take a lesson in watering from the Crystal Palace, and have a cistern a little elevated, and gutta-percha tubing, watering potted trees would cease to be a formidable operation.

As far as I can see into the future, it appears highly probable that the attempt to grow choice fruit in the north otherwise than in orchard-houses will be abandoned, and the neighbourhood of such rich and populous towns as Newcastle, for instance, will abound in houses appropriated to the culture of fruit trees; and I repeat, that even in the more favoured parts of our island as regard climate, in gardens with vineries and Peach-houses in abundance, the Apricot-house and the Cherry-house will be found most useful, and give a gardener much comfort. I must not, however, omit the Apple. Only those who have seen specimens of the fine American Apples, grown on small trees in pots in an orchard-house, can have an idea of their value as dessert fruit; their size and beauty, as well as the nature of their flesh, always tender, juicy, and rich, render them almost unique. I have at this moment specimens of the Melon Apple, part of the produce (eighteen in number) of a little tree grafted on the Paradise stock, growing in an 11-inch pot, measuring upwards of 12 inches in circumference, and perfectly beautiful. The Northern Spy often exceeds this in size, and the Newtown Pippin grown under glass is a superior fruit to those imported. It is only the increased temperature and dryness of the climate under glass that gives those Apples their remarkable beauty and excellence; but little care is required in their cultivation, and the roughest glass-roofed shed will serve for an Apple-tree house.

Innovations in Horticulture, and its sister science Agriculture, are always resisted, and however sound and beneficial, make but slow progress. In this respect how unlike any good mechanical invention, which is at once seized upon and spread over the face of the world! The orchard-house idea was first promulgated in 1851; and although it made its way among amateurs, many of whom having skill and perseverance had great success, yet many failed from thinking that fruit trees could be cultivated in common greenhouses ventilated in the usual inefficient manner. Its great opponents were, however, a class of men who set themselves up as oracles in gardening—men with more words than wisdom. I used formerly to hear persons of this class say, "Oh, this is all wretched nonsense, no tree can be kept in health in a pot more than two years." After twelve years of close observation I am thoroughly convinced that everything appertaining to orchard-house culture is sound, and that those who wish to find pleasure in the cultivation of fruit cannot find any gardening pursuit more agreeable than its culture under glass.—T. R.

ANOTHER WORD ON STRAWBERRIES.

I FANCY your correspondent who signs himself "J.B.C.P.," in the Journal of November 10th, in his strictures on the mode of growing Strawberries as practised here, appears annoyed at an expression used by me in an article contributed to your Journal of October the 20th, in which the word "barbarous" is applied to the indiscriminate removal of the leaves from the Strawberry plants previous to the winter setting in. Your correspondent, in refutation of my practice of allowing a great portion of the leaves to remain on the plants until spring, adopts a rough and ready way of manipulation, by the introduction of a novel instrument for that purpose in lieu of a knife, in the shape of a scythe. If, therefore, he considers this instrument so very effective, he is not aware that it is mowing off all the decayed or spent

leaves and stems from the perennial plants, in his garden in the autumn in like manner, and let his newly-introduced kitchen-garden implement at once supply the place, wherever practicable, of the knife?

Your contributor is at perfect liberty to follow his own course, and he will say the same to me, as regards that with which I am perfectly satisfied. However, for the benefit of your general readers I will endeavour to explain my reason for allowing a great portion of the old leaves to remain during the cold winter months. If, in the early autumn, or when the fruit is all gathered, I were to denude my plants, wisely provided with their coming winter clothing, one of these consequences would arise—either the plants would be insecurely protected against cutting winds and frosts, or Nature must make an unusual effort to reproduce leaves at a period when the plant should be partially at rest, at the manifest expenditure of energy and to the impoverishment of the soil.

It appears similar to me to the shearing-off the wool from a sheep in autumn to compel Nature to supply it with fresh covering from the wintery blast.

Unquestionably fresh leaves would make their appearance and attain some little growth; but does your correspondent believe that these newly-formed ones would be so likely to contend against the storms and frosts of our ordinary winters as the old and well-ripened ones? With regard to his gathering nearly half a bushel at a time from a quarter of an acre of land, for nearly three weeks, planted with Keens' Seedling, I do not consider that so very extraordinary a produce, being by no means equal to what I gathered proportionably from beds of the same variety, and the fruit equally fine. The plants to-day (November 19th), are many of them 2½ feet in diameter.—QUINTIN READ, *Biddulph*.

EXHIBITING ROSES.

HAVING lately been thrown much amongst Rose-growers and Rose-exhibitors, and had a good deal of conversation on the subject of Roses and Rose-showing, I think it may serve the cause we have so much desire to advance if an opening is made for the ventilation of some matters which have in one way or another been brought under the notice of the Rose-loving public during the past few weeks. I do not expect that we shall ever arrive at agreement, either as to the character of Roses or the method of exhibiting; but there are some common-sense points of view, at least so they seem to me, that ought not to be overlooked, and, if possible, agreement come to as to the course to be adopted. Having had some experience also in Rose-judging for some years, I may, perhaps, be considered as having some little claim to obtain a hearing, while the fact of my not being an exhibitor may clear me from the notion of any partiality or one-sidedness in the matter; my sole desire, as far as I know myself, being to advance the culture of a flower which all alike have crowned a queen.

I. WHAT IS A TRUSS?—It may seem somewhat strange that so simple a question should, even now, after so many years of Rose exhibitions still remain a disputed point; but so it is. A Rose throws up, according to its character and habit, shoots that bear sometimes one, at others two, three, four, or five buds as the case may be. Now the question I take to be this—Is the shoot to be shown as it grows, with its full-blown flowers and buds? or is it lawful to disbud—that is, to remove some of these buds for the purpose of throwing vigour into the remaining one or not? and is a shoot so disbudded to be considered as a truss? Now the object for which this is done is, I suppose, to obtain greater size, and this mania for size is likely to spoil our Rose taste. A Rose which is naturally of a medium size can never be exhibited as large, unless by the loss of refinement; and coarseness, I think, is fatal to a Rose. What is the use of a flower as large as a breakfast-saucer if there be no quality about it? A truss, then, I should consider the natural production of the shoot, and that disbudding ought not to be allowed. If, however, this do not meet the views and wishes of the Rose-growing fraternity, I would then say, "Make rules as to what a truss is, and adhere to them," for the present system is manifestly unfair—viz., that some should exhibit them *as nature*, while others have by copious

disbudding obtained size, which I know with some judges supersedes quality. It is said that if you do this you must examine each Rose, and pull it out of its tube, &c., in order to see whether it is fairly exhibited. Not so. It might be and would be desirable to examine one or two in each stand; but of this I am persuaded, if a man wishes to be dishonest as an exhibitor no rules will stop him. Even during the past season I saw flowers, not Roses, exhibited, of which I am morally certain not one was grown by the person in whose name they were put up. There was no proof to the contrary, and so the matter was passed by.

II. HOW MANY TRUSSES SHOULD BE SHOWN?—This opens out the question of trebles, and number of blooms also. If the rule with regard to disbudding were maintained I would discard trebles *in toto*; it entails so much labour on the Judges that, unless they adopt the French plan of allowing one whole day for the adjudication, I do not see how it is to be done. The place of exhibition is rarely cleared before half-past ten o'clock, and at twelve, both at the Crystal Palace and Kensington, the public are to be admitted—yet in that hour and a half some Judges have to decide on the merits of perhaps eighteen hundred Roses! Moreover, too frequently one good flower is obliged to carry two indifferent ones on its back, or to hide them, rather, in its ample folds; to obtain nearly three hundred good Roses taxing even the ingenuity of our largest growers. Then I would do away with the 96 Class altogether, and make fifty the highest, giving more prizes for smaller numbers. Rose-growing is now so extensive that there need be no fear of not having the stages filled—nay, I think they would be better filled if so many flowers were not required. Who would not rather see forty-eight really good flowers than twice the number of indifferent ones?

III. IN WHAT MANNER OUGHT THEY TO BE SHOWN?—"Oh! with moss, of course," exclaims every looker-on. Softly, gentlemen, if you please. Why so? What reason, except some sentimental one, can be given for it? If moss be fit for Roses, why not for Dahlias? What is the object to be gained by a Rose show? Surely the seeing of the best Roses. Now, I verily believe this moss hides a multitude of sins; and a bed of fresh, bright-looking, green moss is quite a foil to many a piece of blackened and spotted foliage, while it is a manifest injustice to many a Rose-grower. Often, I am convinced, the excellence and smoothness of the moss catches the eye of a judge, and first impressions very often do a great deal, so that a person who lives in the neighbourhood of Windsor or Epping, or in any wooded county, has a most appreciable advantage over those who do not. Why, if I were to run the risk of breaking my neck for a week in this neighbourhood, I could never find a bit of moss that was worth looking at, and, consequently, could never hope to put up a stand satisfactorily; and then there is another most serious drawback—viz., the expense of transit that it entails. Boxes must be carried already prepared for exhibition; and with the moss in a damp state, which it must be, the weight is considerably increased; so that all idea of gaining anything by the prizes is taken away. Mr. Hedge's gardener told me the other day, that when he took his Roses to the Birmingham Show it cost £12, and, although he took all the first prizes, he only obtained £14; whereas, if they were exhibited as Dahlias are, the boxes could be easily carried, and the tender mercies of the guards and porters could be dispensed with. There would then be no need for the gardener to sit in the break-van to mount guard over his treasures, as I know to have been done, and the break-neck work of setting them up at the Palace would be avoided. Moreover, we should be much more likely to see that all was fair in the exhibiting, and the quality and character of the foliage would be more conspicuous. If "good wine needs no bush," I am quite sure the Rose needs no meretricious ornament to set her off. The addition of foliage is fatal, and so would I make the addition of moss. Nothing but the Rose *pur et simple*.

IV. OUGHT THE CLASSES TO BE SEPARATED?—A good deal has been said lately about the necessity of doing this. With both hands I protest against it. Have the advocates of it ever really seen a box of Moss Roses worth looking at? I never have, and a box of Teas is almost as poor; and although we have great brilliancy of colour in the Hybrid Perpetuale, yet I am sure it would be ruin to them to

them by themselves. Let it be remembered, that they, various and beautiful as they are, are after all only shades of red, from very faint blush up to brilliant and dark crimson; for Madame Rivers, and Caroline de Sansal, and even Mademoiselle Bonnaire, are not white Roses, and Louise Darzins is more of a Noisette, and will never make an exhibition Rose. And then to exclude the buffs and yellows amongst the Teas and Noisettes would, I am sure, be a most unwise step—they help so to relieve the boxes, that I cannot conceive a stand would look well without Gloire de Dijon, Céline Forestier, or Triomphe de Rennes. At the same time, I do not think undue preference should be given by judges to those stands where these appear. It is not in the south of England much more difficult to grow a Tea Rose than a Hybrid Perpetual, and yet often I fancy there is an impression that of five or six Roses from amongst the Teas and Noisettes, the stand which is so furnished ought, whatever be the merit of the flowers, to have the preference. It strikes me that this is wrong, and that the judgment ought to be irrespective of the classes, simply on the merits, individual merits, of the flowers shown.

V. ARE FANCY CLASSES DESIRABLE?—Let me explain my meaning:—such a prize, for instance, as one for a single truss. To take off a £2 prize for one Jules Margottin, is, no doubt, a very nice thing; but is it not calculated to mislead? and might not the funds be better employed? These bouquets of Roses, unless some definite notion of the terms of adjudication be given, must continue to be what they have proved—a source of perplexity to judges, and of annoyance to exhibitors. At the Crystal Palace the Judges were told that the vase in which it was exhibited had nothing to do with the merit of the bouquet; the quality of the flowers and the taste of the arrangement were the points to be considered: hence the prize was given to a very fine bouquet of very fine Roses. At Kensington, on the other hand, the quality of the Roses seems never to have been considered. The first prize was awarded to one of Mr. March's stands, which contained corals, &c., and a few very poor specimens of Roses, and was avowedly given because of the taste displayed in the stand, which taste I considered very questionable, my notions on that point tending towards severe simplicity, and abhorring all cockneyism.

I have thus gone over the various points connected with Rose-exhibiting that have suggested themselves to me. The opinions are my own, although in most of them I am strengthened by the opinion of some of the most successful exhibitors we have, both amongst nurserymen and amateurs, and I shall be only too glad if they are the means of opening up a discussion on the points. The more such subjects are discussed, if done in a friendly spirit, the more I am persuaded will good be effected; and let us hope that Rose-showing may be in fashion even more than it has hitherto been. Not a grower in the kingdom but has to tell of very large quantities being sold this autumn, and this we must hope is suggestive of an increased interest in the loveliest and most generally loved of all flowers.—D., Deal.

DO LEAVES ABSORB MOISTURE FROM THE ATMOSPHERE?

YOUR correspondent "S. L. G., Cornwall," asks for more information on this subject.

The question, as will be seen on referring to the works of physiologists, is a disputed one; some contending that leaves do, and others that they do not, absorb atmospheric moisture. Bonnet, who paid much attention to this subject, found that some plants absorb moisture either by the upper or under surface of the leaf indifferently, but that some absorb more powerfully by one surface than the other. He found that the leaves of the Kidney Bean and Cabbage, with some other vegetables, retained their verdure equally long whichever side was deprived of the power of absorption, whilst the leaves of Peru and others lost their life soonest when the upper surface was prevented from absorbing; and, on the other hand, that, of many trees and shrubs, the leaves soon died when absorption by the under surface was prevented. These experiments, however, cannot be considered conclusive, as leaves absorb moisture, for by preventing absorption they would hinder evaporation in some cases, and saturation in

others. Dr. Lindley agrees with Bonnet, but many eminent men advance in proof of the non-absorbing power of leaves that if they be made to float on coloured infusions no colouring matter whatever enters them. I will give proof sufficient, I think, to convince even the most sceptical that leaves in a healthy condition do possess an absorbent power; and I hope to show, when roots are disposed of, that it is by no means uncommon for leaves to absorb nutriment from the atmosphere irrespective of that collected by the spongioles.

If a plant be allowed to become dry at the root the leaves will flag from want of moisture. They emit more water than the roots afford them. Syringe the plant whilst under the same amount of light, and the leaves regain their original freshness. I am aware, if the plant were placed in a moist atmosphere and shaded from light so as to prevent too hasty evaporation, that the leaves would become fresh. But how could the leaves repair the waste consequent on evaporation if they did not absorb moisture? That they obtain moisture from some source is manifest, but whether from the atmosphere by absorption or from the dry soil through the spongioles is a matter of doubt. If they obtain the moisture through the spongioles it is evident that syringing the plant whilst under the influence of light hinders evaporation. De Candolle assigns light alone as the cause of evaporation, but dryness has quite as much to do with the evaporation of water by leaves, as in the case of plants in rooms dark but dry. If light be the cause of evaporation it is evident we do not cause darkness by syringing the plant's leaves, therefore evaporation goes on: the roots do not pump up more moisture, and yet the leaves become fresh. We, however, will not syringe a drooping plant, nor place it in a moist atmosphere, nor shade it from light, but let Nature take her course. There shall be no syringing of the house, the temperature shall not be altered, and the degree of humidity, as indicated by a dry and wet bulb thermometer, shall remain the same during the night as during the presence of light. Examining the plant at midnight the leaves still droop. There is no moisture in the atmosphere, and the darkness does not prevent evaporation. Morning finds it no better. We will then syringe it, prevent water reaching the roots, and keep it from light, sprinkling every available surface with water, shutting up the house, and syringing the plant again before dark, also allowing the temperature to fall considerably during the night so as to favour condensation. The result will be that the leaves will be fresh in the morning. Further: during hot dry weather in summer when the ground is little short of dry dust, what gives the flagging leaves by day their freshness in the morning? Not because they inhaled oxygen and liberated carbonic acid; but because they absorb moisture along with the oxygen, in sufficient quantity to repair the waste of the previous day, again to be exhaled during the day, unless the weather prove cloudy. If, however, the day be sunny the oxygen inhaled during the night is exhaled during the day. This I have on the authority of Saussure. If plants derived no benefit from dews the non-absorbing powers of leaves would be determined; but as all foliage is refreshed by moisture or dew falling on it during the night, the absorbing power of leaves seems to be established. Further: every operation in the cultivation of plants by artificial appliances acts on the principle of moisture being absorbed by leaves at night. The cultivator bedews his plants with water, makes all moist about them, and seeks to rest them by keeping the temperature 15° to 25° less by night than during the day.

Again: let a Gloxinia leaf be detached from the root, it cannot, therefore, obtain any moisture in that way, and expose it to the influence of the sun or light so as to cause evaporation from it until one-fourth its weight is lost from evaporation; then place the footstalk of the leaf (petiole) in a quill filled with oil, so as to prevent absorption through it; next moisten the upper and lower surface of the leaf, and, sticking the quill in moistened silver sand, place a bell-glass over it, and put it in the dark. The leaf regains its freshness, and if we examine the under surface we find it dry, the moisture having been absorbed more quickly by it than by the upper surface, which remains moist or wet. Absorption is, therefore, more rapid by the under than the upper surface of a Gloxinia leaf. A Gloxinia leaf is covered with a quantity of hairs on both sides, every one of which performs a mean office in the vegetable economy and that office, I

believe, is the absorption of moisture. The pores, or stomata, also absorb moisture, and thus a rootless leaf is enabled to retain its verdure until a callosity is formed and roots are emitted. A leaf of the Cineraria, Begonia, or Vine, taken in a flagging state and placed in a close, moist, and shaded atmosphere, regains the fulness of its parts through its stomata while its leafstalk is deprived of the power of absorption. Moreover, we have a Calceolaria cutting and we will allow it to flag. If in that state the bottom of the stem is placed in a vessel containing oil, the leaves being moistened, and if it is then placed on moist sand with a bell-glass over it in a shaded place, the leaves not only absorb moisture sufficient to fill their empty cells, but that of the stem as well.—G. ABBEY.

WINTERING BEDDING PLANTS.

THE following is the plan I prefer to many:—

For instance, the Geraniums: I put three cuttings into a 60-sized pot, in a compost of leaf mould, loam, and a sprinkling of silver sand, the pots being previously well drained. They are then placed in brick pits with lights over them. After they are struck they are fully exposed to all the light and air possible; but in case of heavy rains the lights are then replaced. I may add that they occupy the same pots through the winter, and are stored away in the greenhouse as closely as will permit a current of air passing freely between them. The supply of water required is very limited indeed until the days lengthen, when they will require a somewhat larger supply. About the middle of March I dig out all the Celery-trenches that are required for the season, and, these being 4 feet wide, in the bottom I place about 4 inches of leaf mould and road sand mixed together. I then fork it in lightly with a little of the common garden soil for the reception of the stock of Geraniums, which are planted about 9 inches from plant to plant in the rows, the rows being about the same distance asunder. Prior to dividing them I give them a thorough good soaking of water, after which we can perform the operation without the least injury or check to either of the plants. They are sheltered with straw covers, such as are used at Putteridge Bury, and so often described by Mr. Fish.

After they are all turned out there are about two thousand pots at command, which are then all washed clean preparatory to the potting of such as Verbenas, Lobelias, and a great variety of the more tender kinds of plants. The Calceolarias are never troubled with either pots or artificial heat: they are treated precisely the same as we have done them before at Putteridge Bury under the directions of Mr. Fish, and we shall be greatly surprised if we lose a dozen out of two thousand plants.

The Calceolarias are planted out in the trenches as above mentioned for Geraniums. They both do equally well, and by the time you want to plant them out they are fine stocky plants. With the aid of a trowel or small fork we can lift them with as much ball as we like; and after planting them in their respective quarters, the soil being previously well stirred, and finally a good watering, not a leaf of either would be seen to flag.—J. B. C. P.

GRAPES SHRIVELLING WHEN IN BLOOM.—Having seen an article in your Journal of March 24th about Grapes shrivelling up when in bloom, I wish to state that I witnessed the same in a large late vinery, of which I had charge at a somewhat later date, although in certain parts of the house they set well. Thus, one cane at the end of the house, which was brought down at the top to nearly a level position, sets its bunches well throughout its length. Also, in other parts of the house where the shoots happened to grow up under rafters shaded from the sun, the bunches set and did well; but in this case it was near the top of the house that they did so. In my opinion the well-doing of the Grapes depends upon the position of the canes at their blooming season, or even before it, and after the Grapes are set. The Vines above-mentioned were planted in the usual way in a border in front of the vineries, the border being rich and moist.—D. PRATT, *Gardener to the Hon. D. Russell.*

HOLLYHOCK FLOWERS BECOME BLACK.

YOUR correspondent, "AN OLD LADY'S," Dahlias would have looked well with my black Hollyhocks. You do not believe that her Dahlias became white, and you may be equally incredulous that we have about fifty Hollyhocks, fine double flowers of all colours, which last year turned black. I let them remain, as I thought they might return to their true colours this year, but again they were all black. Every one that has seen them remarks that the like was never known before.—A SUBSCRIBER FROM THE COMMENCEMENT.

[We never before heard of such a wholesale change of colour. Certainly we have heard that clayey loam, blue vitriol, and iron filings have sometimes changed Hydrangeas blue; and also that Norwood loam, on account of its large amount of iron, had the same effect. Granting that you have not been deceived, the complete change from many colours to one must depend on something in the soil. It would save a deal of uncertain speculation in many cases if our correspondents would state particularly the nature of their soil and subsoil when advice about plants is asked for. Pray tell us the nature of the soil in which your Hollyhocks have played such fantastic tricks.]

GARDEN BOILERS.

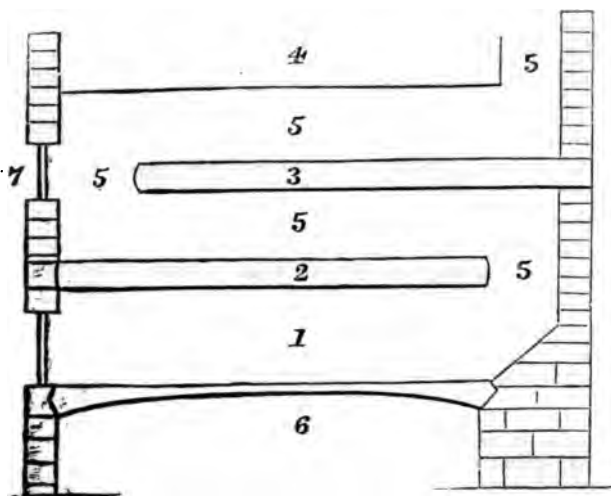
IF I had not had the experience of above ten years' experiments amongst the various modes of heating garden structures, I should not now venture to pen a few words upon a subject so important to my brother amateurs.

I have tried various kinds of boilers and various modes of heating them; and as I am also the proprietor of a large establishment where I have steam boilers and hot-water-heating apparatus employed in my business, I may venture to give the result of my experience, and, if needful, warn your readers against some useless outlay. My principal reason for writing at present is that I see a disposition to employ a method of heating water which has the tempting attraction of being apparently the most efficacious. I say apparently, because I know that it is deceptive, not intentionally so, but nevertheless both deceptive and expensive. I allude to what are called tubular boilers. There is no novelty in the idea of heating water in tubes, and it is equally certain that when quite newly erected it is the most economical method of conveying heat to water, but the apparent economy soon vanishes unless extraordinary mechanical arrangements are provided for perpetually keeping the tubes free from soot, which is well known to be a most perfect nonconductor of heat. Many, very many years ago, various ingenious methods of heating the water which is used in large steam boilers were tried, such as passing the pipes through the furnace itself (a fallacy, for it was robbing Peter to pay Paul)—another plan was to use the waste heat between the boiler and the chimney, to heat the water in a pipe or pipes fixed in the flue, which is exactly the principle of the present fashionable tubular boilers. This method was found to act admirably for a short period, but as soon as the pipes became coated with soot, the water actually became cooler instead of hotter, though it passed in the pipes down 40 or 50 feet of a fiery flue: consequently this system was abandoned, until a clever Mr. Green discovered and patented a method of working by mechanical agency a set of sweeping-brushes or scrapers, which are perpetually traversing up and down a set of tubes placed in a flue perpendicularly, exactly like the tubular boilers, and by this means keeping them free from soot. It is only by the perpetual cleaning that these pipes can be kept hot; if the sweeping machine stops, the pipes soon become cold. Your readers will see that the same result must inevitably take place with their tubular boilers. At the outset the new boiler does wonders. It is watched at first by both master and man, but after a while both will have cause to express their disappointment because they cannot make the fire heat the pipes as it did at first, or at any rate without an enormous consumption of fuel, which only succeeds because it manages to touch some small part free of sooty deposit. Now, remember that I do not dispute that tubes are the most economical mode of imparting heat to water, to do so they require to be kept perfectly clean; and

can that be done except by mechanical means, kept in motion by machinery? and how few, how very few of us, could or would incur such an expense?

From the above remarks you will agree with me that amateurs must look elsewhere for the great desiderata in a garden boiler—namely, “simplicity and efficiency,” or should I say efficiency and simplicity? for it is difficult to decide which should be put first, both being of such importance. I have reason to believe that the boiler the most simple in construction will in the long run prove the most efficient and decidedly the most economical; such at least has been the result of my own experience and the result of my observations on the successes and failures of my neighbours. Now I will only venture to describe two kinds of boilers which appear to me to be exactly what we all require—exceedingly simple in construction, efficient in action, and economical in working. The first being the oldest shall be described first: it consists simply of two flat oblong cast iron boilers, 2 feet 6 inches long, 2 feet wide, and only 3 inches outside depth, with a flange pipe on each end by which they are connected with each other.

Now the manner in which these are placed secured for them the greatest possible heat, and the plainness of their construction afforded the best chance of their being kept free from soot.



No. 1, fire-box. No. 2, the lower boiler connected with No. 3 by a pipe which is not shown, the flange pipe at one end of No. 2 being the feed, and the upper flange pipe of No. 3 being the flow.

The two boilers are set with their edges resting on fire-brick walls, and the ends placed as shown in the engraving. The heat from the fire passes by the flue 5, 5, 5, 5, under and over both boilers and round one end of each; it also passes under No. 4, which is a separate and independent pan or tank having a sand-bed under it for propagating purposes.

No. 6 is the ash-pit, and No. 7 is a framed iron door, which enables the man to rake out any soot which may accumulate; a damper at the top of the flue regulates the draught. Now this has been working for years, and probably will outlast many of the present generation of boilers. It certainly has not yet been beaten in efficiency, and has the merit of not being particular about the quality of the fuel.

The next is equally simple, but to my mind more efficient, because it economises all the heat by surrounding it with a jacket of water. It is constructed of two plain cylinders, inside the other with a space of about an inch wide for the water between them. The feed-door is at the top; on the side and at the bottom is a small door to withdraw the ashes. The part above the feed-door may be made to form part of the boiler, or it may be made available to heat a propagating tank as before described. Now a boiler of this description burns coke, or coke and small coal mixed, but it has this advantage that it does not require feeding so frequently, and it is economical.

these little boilers will keep hot. In appearance it is not unlike a cannon boiler set on end. I have seen one of these boilers, 3 feet long and 1 foot diameter inside the cylinder, heating 900 feet of piping. The especial advantage of this boiler is, that as long as the fire is burning in any part of the upright cylinder, it heats and causes the water to circulate, so that whether the fire is burning at the bottom or has eaten its way towards the top of the fuel the boiler is in action, and the intensity can be regulated by a damper which is attached to its outlet-flue. These boilers also do not require any brick-setting to fit them up, but I recommend them to be enclosed in some rough covering to economise heat.

I have no intention to recommend any particular boiler-maker, in fact I shall decline to do so, because the proper medium of such communications is through your advertising columns.—W. W.

BLANCHING CELERY.

SEEING lately in your Journal some remarks on different modes of blanching Celery, I am reminded of a plan I saw in Oxfordshire in August last. It was simply placing a common drain-pipe upright, and allowing the plant to grow up through it. My friend, in whose garden I saw it, assured me that he not only had his Celery blanched much better, but also that it was ready for the table much earlier. That the latter is the case I can affirm from my own observation; for the plants I saw growing in the pipes had already grown above the tops of the pipes, while those treated in the ordinary way were not half so high.—A POOR MAN.

A PLEA FOR THE ARBORETUM.

OF late years the importation of trees of foreign growth into this country has certainly been all in one channel—Conifers. Assuredly the countries whence our many really useful members of this family have been drawn possess other species of forest trees new to this country; and much as I admire the class of plants now so popular, it is certainly a pity that it should usurp the whole attention of planters.

I am old enough to remember when the term “Arboretum” came prominently before us, and it was strongly urged on gentlemen possessing the means, or where in public gardens the situations were suitable, that planting all the newly-introduced trees that foreign parts afforded should be commenced forthwith. Now, public attention seems to be confined to the consideration of the Pinus tribe alone, and the additions made in other respects to the arboretum during the last twenty years or more have been very unimportant. Assuredly the case ought to have been different.

Do the hilly regions of the western coasts of the American Continent, both north and south, possess no other than coniferous trees? The vegetation of the accessible portions of China, Japan, and Northern India is certainly not confined to the evergreen species we have had from thence.

I am far from finding fault with the introductions that have reached us, but what I would like to see is more variety, and a wider departure from the confined fashionable path of the present day. Could not a move be made so as to lead to a fresh influx of such fine ornamental trees as some of our Evergreen Oaks, and our Magnolias, both evergreen and deciduous? Perhaps some other Acacia might be found hardy. In fact, once draw public attention in that direction and beautiful objects will be forthcoming.—H. L. T.

STEPHANOTIS FLORIBUNDA FRUITING.

IT would be interesting to know what culture is most conducive to the fruiting of the above most fragrant stove climber. The plant referred to by your correspondent, Mr. Morris, of which he had charge when foreman here, failed to fruit this season, although a much larger plant and in more robust health.

When living as gardener at Winch House, in Cheshire, the roofs of two Orchid-houses were entirely covered with a plant of this species, and it was subject to a great

amount of heat all the season through; but during the seven years I had charge of it I never once saw a single fruit. This plant produced annually bushels of bloom, and was, indeed, a most glorious sight when in flower. At more than one place in the neighbourhood the *Stephanotis* has fruited, but under what circumstances I cannot say. Does it fruit better in a pot than planted out? Or has heat or impregnation anything to do with the result? Perhaps some of your correspondents can enlighten us.—JOHN EDLINGTON, *Crom Castle*.

CHRYSANTHEMUMS AT MR. SALTER'S NURSERY.

MR. SALTER'S name is inseparably associated with the *Chrysanthemum*. Not only is he a most successful cultivator of that flower, but also the raiser and introducer of many of the finest varieties which we at present possess. Nor has he ceased to advance in that path of improvement in which his name has become celebrated, as his collection, which comprises every variety of known worth and many beautiful novelties besides, will amply prove.

In the open ground, two borders, each more than 120 yards in length, are filled with fine blooming specimens with flowers of every shade of colour, affording an opportunity of judging of the merits of different kinds for border purposes and of their comparative hardiness. For the latter purpose the late frosts, preceded by heavy rains, have unfortunately afforded too good a test.

But it is in the winter garden, a T-shaped house, 95 feet long by 18 wide, that the gems of the collection are to be found. On entering this the eye wanders over a mass of the large-flowering kinds, fronted by pretty *Pompones*, and beautifully arranged for effect; whilst on the other side of the winding walk which runs up the centre of the house are pretty groups of less height, and small circular beds of *Pompones*. To give relief from so much colour, *Orange trees* in fruit, *Araucarias* and other plants remarkable for the beauty of their foliage, and here and there plumes of the *Pampas Grass*, are introduced; and *Ferns*, such as *Adiantums* and *Scolopendriums*, are liberally used as edgings. One small clump near the entrance of the house contained variegated *Ivy* of the sort called *latifolia maculata*, the leaves of which are beautifully diversified with white, and contrasted well with those of a very dark kind, covering the ground at the base.

Among the new varieties already sent out were—*Her Majesty*, not very large but beautiful in colour, which is a silvery bluish; *Lord Palmerston*, a rosy amaranth, peculiarly tipped with white; *Dido*, white; *Abbé Passaglia*, brassy amber; *Antonelli*, a fine salmon orange; *Beverley*, a remarkably fine large cream white; and *Queen Margaret*, a large rose *Anemone*, with a bluish centre. Of varieties less recent were fine examples of *Lady Harding*, *Progne*, *Versailles*, *Defiance*, *Prince Albert*, *Mulberry* (a fine colour though rather small), *Triomphe du Nord*, *White Queen of England*, *Lady Margaret* (large white *Anemone*), and host of others.

Of seedlings, Mr. Salter has several of the highest merit, and many more of great promise. Conspicuous among these are *Prince Alfred*, a beautifully incurved rose amaranth, which even in its present state is 5 inches across, and when grown for size will, doubtless, attain yet greater dimensions. *Princess of Wales* is another magnificent flower, an ivory bluish, and it will probably grow as large as *Prince Alfred*. Both of the above will, doubtless, take a very high position when sent out. General *Bainbrigg* is a beautiful bright cinnamon; *Jupiter*, a deep chestnut tipped with gold; *Lord Clyde*, a blood crimson, fine in colour, though rather flat. *Mrs. Haliburton* is another finely incurved, full-sized flower of a rose pink; *Venus*, delicate peach, with a high centre, is also large and finely incurved. *Pelagia*, yellowish-ivory; *Bernard Palissy*, orange scarlet; *Hypatia*, marbled rose; *Florence Mary*, bright red; *Lord Brougham*, dark chestnut; *St. Patrick*, deep rose and bluish; and *St. Margaret*, large orange *Anemone*, are all sorts of great promise, and to these might be added several others which have not yet been named.

In a small house adjoining that in which the principal display is, are some very dwarf specimens, not exceeding

18 inches in height from the base of the pot, the plants being in some instances not more than half that height above the rim. They were formed by allowing the shoots to take their natural growth, and then bending them round the pots, which, in some cases, are completely hidden. Among them were beautiful specimens of *Prince Albert*, *Her Majesty*, *Julie Lagravère*, *Julia Crisi*, *Progne*, and some of the seedlings above referred to. In the same house were a pretty orange-and-yellow-mottled *Pompon*, another rosy lilac, both, however, being as yet unnamed; also, a variegated *Gazania splendens*, the leaves having a golden margin, and which is likely to prove a good edging plant.

Mr. Salter has, besides a large collection of hardy variegated plants, a very pretty variety of the *Pampas Grass*, with the leaves broadly edged with pure white; but the plant is not yet for public inspection, and being very young it would be premature to say much about it, but if it maintain the purity of its white when of older growth it will be a decided acquisition.

AMMONIA FOR GRASS LAND.

I WANT to apply ammonia to some grass land. I find sulphate of ammonia advertised at £17 per ton. I can procure soot (25 lbs. to the bushel) at £2 4s. per ton. Soot is said to contain two-fifths of its weight of salts of ammonia. If this be so, I can procure two-fifths of a ton of salts of ammonia—i. e., 8 cwt. for 44s., whereas 8 cwt. of sulphate of ammonia would cost 136s. Without valuing the other ingredients of the soot, is it not better to apply soot than sulphate of ammonia? or does the latter possess any special advantage over the salts in the soot?—R. I. I.

[Independently of the economy, we should prefer applying the soot. It will afford quite as much ammonia as the grass needs, and its other ingredients are beneficial to grass. We should apply it early in the spring and during showery weather.]

FLOWERS IN A WORKHOUSE.

WHEN recently inspecting, court by court and room by room, the large new workhouse in my neighbourhood, as a member of its visiting committee, besides being struck with the beauty and admirable arrangements of this building, the perfect ventilation, the separation of the hospital far away from the body of the edifice, the excellent cooking apparatus, the water supply, the chapel, and the all-prevailing cleanliness, there was one thing which very much surprised and pleased me in addition to everything else, it was this—the presence of Flowers in the Workhouse.

Now, some years ago it happened that, during the illness of the chaplain, I officiated as clergyman in a union poor-house in another county. But I own I found it to be very weary heart-saddening work, and I would not have been its permanent chaplain on any account. I felt that it was so different to meeting the poor in their own cottages, however humble they may be; there were the bare walls, the prison-like aspect, the absence of any decoration, even the simplest, nothing to break the cold look of the large windows and the blank stretch of the walls. Entering each room without the tap which true courtesy gives at cottage door of the poorest, brought a consciousness of my having before me, some of my own countrymen it is true, but they degraded in the social scale below the cottager, and this for very usually no sin, and all this oppressed me. Now, in visiting this present workhouse I experienced far less of this painful feeling, and this set me thinking why it was so—what was the reason? I soon discovered that it was partly owing to the presence of flowers inside as well as outside the building. The worthy master is both a lover of flowers, and, what always accompanies it, a man of taste. Thus, under the walls of the little square courts, miniature quadrangles, he has managed little borders, not more perhaps than 2 feet wide, but gay with common flowers, and with some flowering plants trained to the walls. In the centre of some of the larger courts my eye was greeted with that very effective flower-basket, if not too large, a portion of a trunk of a tree, rich with knots and fantastic in shape. In these were *Scarlet Geraniums* and other suitable plants. At the sunny end of the long wide passage

which runs the whole length of the house on the second floor, I found almost a greenhouse, with here and there in suitable places a flower-stand. In the large room occupied during the day by the old women, the long south window was actually full of flower-pots, and boxes with cuttings. Here was the cottage window most pleasantly brought to mind.

I noticed some disturbance of the gravel in the centre of the old women's court (and to the old of both sexes the warmest side of the building is most properly given). I asked the reason of the earth being thus disturbed, and received for answer, "Oh! master's going to make us a flower garden." So, therefore, during the long summer days the poor old bodies could sit on the benches in the sun, and blink and dose and enjoy their flower garden. Here, then, was a source of great pleasure to the poor worn-out working people (for it was the same also in the old men's court), here was something of a home feeling brought back to them, I would fain hope, by the presence of flowers. This it was too, which took away from my mind, to a great degree, that oppressive jail-feeling which I have described above. I should also add that this workhouse is built upon a piece of ground quite in the country and commanding a fine view. Now, all honour, say I, to the kind and tasteful master of the workhouse for his pains and care in making his poor inmates happier, as I really believe they are made happier, by the presence of flowers; for, remember, it was not only in his own apartments, but in all other parts of the house that flowers abounded. I would also say, that while Guardians duly and most properly provide the in-door paupers with the Book of Revelation as a main source of comfort, yet the book of nature is well calculated to soften and comfort sad, and, humanly speaking, hopeless hearts.

I send this little account to THE JOURNAL OF HORTICULTURE, that, as thank God, in this world, bad though it be, good is contagious as well as evil, some other master of some other workhouse, himself a lover of flowers, may make his house as attractive as the one of which I have spoken.

Let me in conclusion remark, that the excellent chaplain and visiting ladies of my workhouse have not only taken care that in the different wards "admonitory and consolatory texts should inscribe their walls," but they have given for decoration many of the gay pictures from the "Illustrated London News," "British Workman," and other periodicals, and even in the school-room there were pictures as well as maps: so that what with flowers in the courts, passages, and windows, and pictures on the walls, the cold cheerless criminal-look was quite gone. I felt, and fondly hope that some of the better class among the inmates felt too, that this workhouse was not only a dwelling, but almost a home. —WILTSHIRE RECTOR.

CHRYSANTHEMUMS IN THE TEMPLE GARDENS.

HEAVY rains succeeded by sharp frosts are not conducive to out-door displays of Chrysanthemums, and, hardy as that flower is, it could not fail to suffer under such circumstances; still the general effect of the beds in the Temple Gardens is very good, though some have been touched with the frost.

In the Inner Temple Mr. Broome's principal border, about 70 yards in length, is as usual covered with canvass, except in one part where glass sashes have been used. This is a great improvement, for in November days in London there is no light to spare, and the transmission of what little light there is soon in a great measure prevented by the canvass being covered by "blacks." It would be desirable if the whole of the back of this main border were temporarily covered with glass; the cost would not be great, and in the long run glass would, probably, be more economical than canvass.

In this main border an extensive collection of the large-flowering varieties is ranged, diminishing in height towards the front row, which consists of Pompones.

Among Whites—Vesta; Snowball; Beverley, a new and fine cream white; and White Formosum, seem the best.

Of Yellows, the most worthy of remark are Etoile Polaire; a globe, a bright early kind; Chevalier Damage, very use-

Formosum; Golden Hermine; Cherub, a fine golden amber; and Jardin des Plantes, one of the finest of its colour, golden yellow.

In Orange and Buff we find General Slade; Cassy, very fine; Orlando; Mr. Jay, a new reddish-orange; Dupont de l'Eure; Antonelli, salmon orange; and Lord Ranelagh.

In Reds—Rifleman, Madame Poggi, Prince Albert (crimson), Dr. Rozas, Progne, and Pio Nono are the best.

In Lilac and Blush, &c., we have Queen of England, almost white; Alfred Salter, very large, delicate pink; Ariadne; Hermine; and Aimée Ferrière, white tipped with rosy pink, and very beautiful.

Of Pompones, the most striking are—Salamon, rosy carmine; Mr. Astie, yellow Anemone-flowered; Duruflet; Cedo Nulli; Lilac and Golden Cedo Nulli, the former a sport of Mr. Broome's own which answers admirably for bedding; Aurore Boréale; Argentine, silvery white; Hélène; Barol, a very early golden yellow; Mustapha; St. Thais; Bob; and President Decaisne.

Besides the main border referred to above, there are two others equally well filled, stretching north and south, one 70, the other about 96 yards in length; and there are in addition some two dozen small circular beds filled with Pompones neatly trained by means of a stake in the centre, which is highest, whilst the surrounding plants are tied down. This is the fourth crop which these beds have borne, the first being bulbs, the second early annuals, the third bedding plants of various kinds, and the present one Chrysanthemums put out in the end of September. Thus a succession of bloom has been secured throughout the season, and if gardeners took a lesson from the example which Mr. Broome has given, our flower gardens would not be gay for merely some three or four months out of the year, but from the time that the early bulbs peep above the snow till winter comes again.

In the Middle Temple Mr. Dale has also a good display, including remarkably fine blooms of Queen of England, Lord Palmerston, Campestroni, Cherub, Little Harry, Novelty, Favourite (a pleasing rosy pink), Oliver Cromwell (a new ruby of fine form and very smooth outline), Golden Hermine, Plutus, and Yellow Perfection. There are several fine blooms of Fleur de Marie, a large white Anemone. Vesta appears to be one of the best of the Whites for lasting. Golden Christine is very free in borders. The beds on the grass are filled with masses of Pompones in full bloom; the two circles near the river are each composed of ten varieties radiating from the centre, and present a gay appearance.

GOLDEN-VARIEGATED ARABIS AND CENTAUREAS.

Mr. Rosson will be pleased to hear that the variegated Golden Arabis lucida exists in all the golden beauty that has been said of it. It is a very dwarf compact-growing plant with lanceolate leaves about 4 inches long, with a broad margin of gold of the same hue as Geranium Golden Chain. It is an entirely distinct species from A. albida, having had its origin from A. lucida, from which it is a sport, and occasionally it goes back to the original. A. albida variegata is grown here also, and is considered a very pretty and useful plant with a cream-coloured variegation, but it is altogether a coarser plant than A. lucida variegata, which latter I consider a perfect gem for edgings, and more especially for long straight lines—so much so that it is considered no longer necessary to grow such great quantities of Golden Chain. A. albida is a most useful spring-flowering plant on account of the enormous quantity of pure white blooms which it yields at that season.

Centaurea argentea, as far as my experience goes, is not nearly so fine a plant as C. ragusina, and the same may be said of C. gymnocarpa. They are graceful plants, but not more so than C. ragusina, and are not nearly so white.

I consider C. ragusina and C. candidissima to be the same. We have at present specimens of this variety that were planted out in May, and that are now nearly a yard across, and it would be difficult to imagine more beautiful objects, raised as they are on knolls formed by lime bullets from the sea-beach. It is really a wonder this fine old plant has not been more popular long ago. I take some pride

I believe I have the credit of making it popular in
nd, where it is now grown in quantities that surprise
utherners when they cross the border.—D. THOMSON.

SOME GARDENS WORTH SEEING.

CORNWALL.

name.	Proprietor.	Gardener.	Station.
.....	Sir C. Lemon, Bart.	Mrs. Johns	Treuro.
ha Hall	T. Road, Esq.	Mr. Davis	Liskeard.

DEVONSHIRE.

pton Park	Duke of Northumberland	Mr. Snowden	Tavistock.
Tavy	J. Carpenter, Esq.	Mr. Agar	Tavistock.
am House	J. Tremayne, Esq.	Mr. Durden	Tavistock.
Hall	A. Kelly, Esq.	Mr. Bloomfield	Tavistock.
Park	H. Bradshaw, Esq.	Mr. Mounsend	Tavistock.

re is a railway being made from Tavistock to Laun-
l, so that some of the gardens will have stations nearer
Tavistock.—K. J. B.

DEVONSHIRE.

Castle	Col. R. Myddleton-Biddulph	Mr. Bridden	Chirk.
.....	M.P.	Unknown	Chirk.
.....	Late Viscount Dungannon	Unknown	Chirk.
ay	Sir W. W. Wynne, Bart., M.P.	Mr. Cope	Raabon.

SHEREPHIRE.

Hall	Earl of Bradford	Mr. Davidson	Shiffnal.
ck Park	Sir J. Kynaston, Bart.	Mr. Shaw	Ellesmere.
pton Hall	Mrs. Ormsby Gore	Mr. Brown	Oswestry.
Park	Mrs. Mainwaring	Mr. Pritchard	Ellesmere.

STAFFORDSHIRE.

Hall	A. Manley, Esq.	Mr. Sharp	Lichfield.
l Hall	Viscount Newport, M.P.	Unknown	Sutton Coldfield.
ert	Marquis of Anglesey	Mr. Thompson	Rugeley.
n Manor	Sir Robert Peel, Bart., M.P.	Unknown	Tamworth.
T. S. H.			

SUFFOLK.

ston Hall	C. Austin, Esq.	Mr. Cooper	Framlingham
Hall	Sir C. Bunbury, Bart.	Unknown	Bury St. Eda.
l Hall	Rev. — Benson	Mr. Griere	Bury St. Eda.
ave Hall	Sir J. R. Gage, Bart.	Mr. Skinner	Bury St. Eda.
ing Park	Captain Powell	Mr. Fenton	Elmswell.
ough Hall	R. J. Pettward, Esq.	Mr. Southgate	Stowmarket.
on Hall	— Glistrap, Esq.	Mr. Henty	Bury St. Eda.
H. B.			

TRENTHAM.

(Continued from page 395.)

I have already indicated the chief mode of communi-
cation for pedestrians, by the iron bridge over the river,
between the kitchen garden and the terraced gardens and
orchard. From this cottage garden, so concealed by shrubs
and trees, there is by means of a boat and rope a nearer
communication to the offices and the rooms, &c., on the east side
of the house. From that ferry across the river lined with
various aquatics, you observe a little to the northward the
entrance of an ancient bridge, over which the road that passes
the carriage entrance to the kitchen and forcing gardens
have already alluded to is continued past the commo-
dious Trentham Hotel, which must be a boon to the many
travellers, and through more of the village, until, entering the
park on the left, you shortly arrive at the beautiful entrance
to the mansion, with a chaste Italian lodge on each side of them, and
at a short distance from the mansion, which is in the
style of architecture, only richly adorned with lofty
trading, urns, vases, &c. The architectural beauty of
the mansion, however, we must leave to others to describe.
The entrance is on the west side, and is thus singular, that
instead of being ushered into a hall or lobby, you at once
enter into a lofty conservatory chiefly ornamented with
palms and Ferns, and having broad stone pathways, that
lead north leading to the public rooms, and that to the
more private apartments of the family. In
connection with this is a court with flower-beds, and beau-
tiful stone plinth edgings, the Geraniums having a brighter
hue than ever they have out of doors, unless in a contin-
uous state of dry, sunny weather. The nearest approach to
Scarlet Geraniums in brilliancy were grown out of
in large boxes by the side of the conservatory, and,
receiving less rain, and much less feeding room for the
they far excelled those that had been exposed to the
hinges of that watery place. Not but that the beds

out of doors were beautiful, but the bright blaze of these
protected Geraniums confirmed what we lately advanced—
that a glass-covered flower garden, with plenty of air, and
moisture as needed, would give a greater brilliancy to most
of our bedding plants; and even an acre, or half an acre so
laid out, would yield more satisfaction than dozens of acres
in the usual bed style out of doors. And then just think of
the nightmare visions, the proprietor, if at all enthusiastic,
and the sleepless nights of the gardener, if at all anxious,
that might be prevented, but which must now be endured,
when several select parties are coming to see "your beau-
tiful place," and the barometer tells you as well as the aches
in your own body, if the rheums have got hold of you, that
you will either have a hurricane of wind, or a drenching,
desolating rain.

From this inner-court flower garden you enter the private
conservatory, which forms the west wing of the mansion, on
the south front. This, especially when the family is at home,
is always kept a picture of floral loveliness. The engraving
from a photograph will only give a slight idea of the beauty
of the massing and foliage and creepers. It gives no idea
of the artistic effect produced by marble statuary, vases, &c.,
for if not moved these alone would have occupied the fore-
ground, and broken and concealed the foliage. This view, as
well as that of Mr. Henderson's residence, and the temple to
follow, were taken by a self-taught artist or amateur, Mr.
Kirkby, of Trentham, and if the engraving is as good as the
photograph, there will be little to find fault with. The con-
servatory is 50 feet by 35 feet.

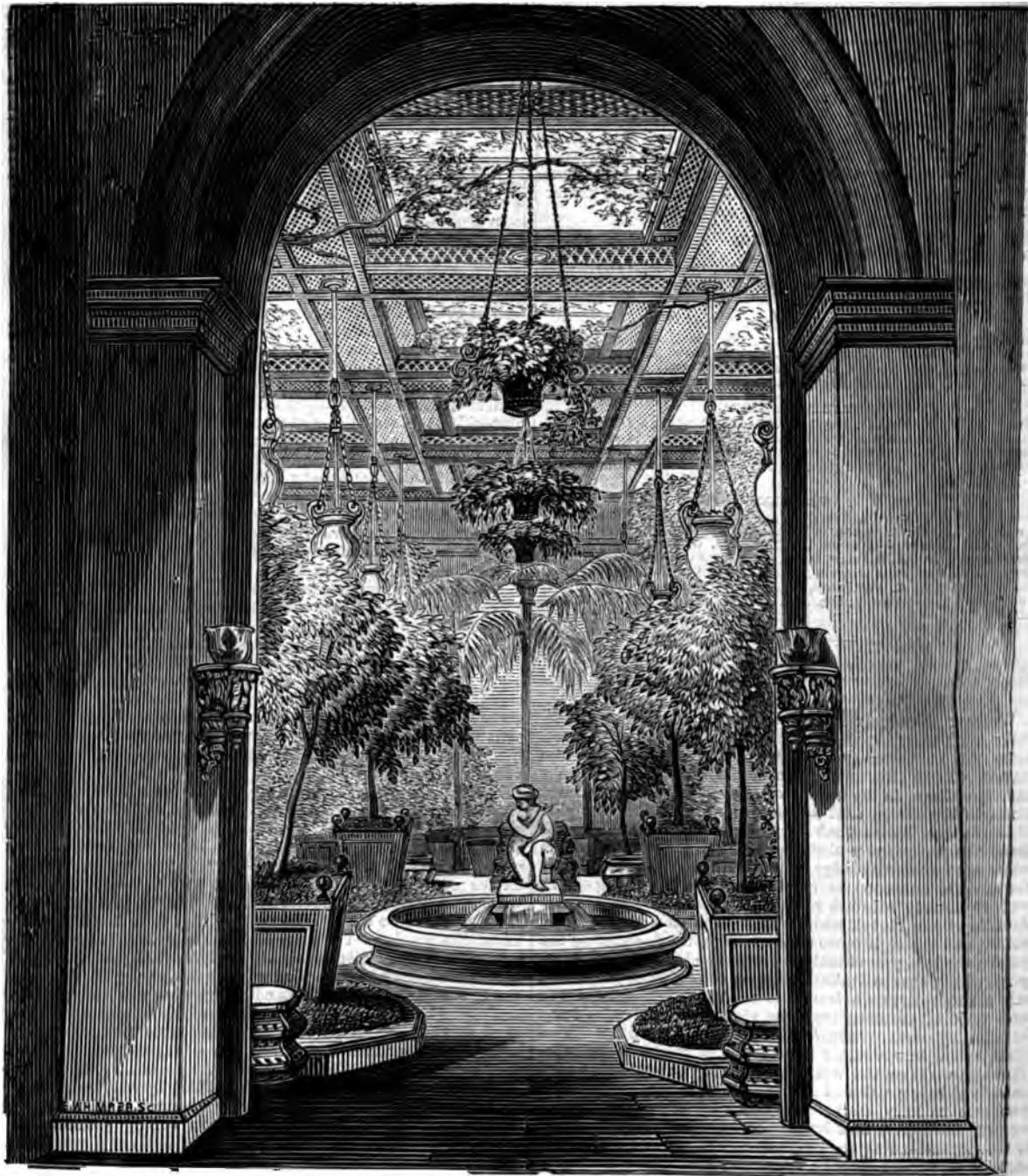
Between this conservatory and a protruding wing on the
east side is placed the slate terrace. The east wing, the
same size as the conservatory, on the principles of balancing
and uniformity, ought also to have been in the conservatory
style; but this somewhat plain end that flanks the slate
terrace, is relieved by the consideration that beyond the
windows facing the south is the principal dining-room, for
however much we love the beautiful, we must pay our
regards to the more material and substantial. We fear that
these dining-rooms often make sad wrecks of our ideas of
the ethereal as respects persons and things, and bring us,
however unwillingly, into the regions of stern reality. This
somewhat tame end is also relieved by fine statuary, most
of the statuary being of a colour as black as ebony. Similar
statues are also placed at the west end next the conser-
vatory, and also in places along this terrace; and each of
these is in such a distinct and artistic attitude as they front
each other, as to lead us to conclude that they must repre-
sent some athletic contest or game of skill, but what, our
limited acquaintance with general or mythological lore pre-
vented us from knowing.

Before proceeding farther, we must here allude to some
little matters that gave us great pleasure, and also because
showing the refined taste that is brought to bear on the
simplest details. The mansion itself is painted or coloured
of a deep creamy stone colour. Close to the base are semi-
circles cut out of the slate terrace, and these were filled
with blue masses of *Lobelia speciosa*, and we can conceive
of no colour more striking in the position close to the walls.
Then the whole of the sills of the lower windows of this
centre front were filled each with a China-box just to fit it.
Plants are grown in other boxes just made to slip in, so that
the China-boxes look as full and overflowing as if the plants
had never been anywhere else. These China-boxes are kept
filled all the year round with plants suitable to the season.
When we saw them each box was a dense mass of Golden
Chain Geranium. What, and so close to such a coloured
wall? Yes, it is true, and most beautiful they looked. But
that you may take our word for it, we must also tell you
that the pretty Wedgwood ware was chiefly white and
green; but the upright bars and a rim at the top were of
the richest blue, and the glass of the windows behind the
boxes was of a light mauve colour. We thought at first
that the blinds were so coloured, but found out it was the
glass. Under such circumstances the Golden Chain was
peculiarly at home.

The sombre colour of the slate-paved terrace contrasts
also well with the colour of the mansion. From the con-
servatory to end wall of dining-room, it is 141 feet in length,
and is 49 or 50 feet in breadth. There is an open space in
the centre opposite the noble fountain in the flower garden.

On each side of this centre is a large oblong bed, and a smaller one on each side of it. The large bed is 27 feet in length, and 13½ feet in breadth, but the ends instead of being square are protruded and rounded artistically. The sides of these beds are of fine moulded stone 13 inches in height. The large beds were thus filled—two dense rows of

purple Verbena next the stone moulding ; then two fine rows of Flower of the Day Geranium, grown only for the foliage, all the flowers being removed ; and the centre was filled with Trentham Scarlet Geranium, except what was taken up with a sarcophagus-formed vessel, and that was filled with Agapanthus umbellatus. The Trentham Scarlet does



From Thumb breed. The small ones stood across the
larger ones, and were we to dance, they had the same way, it
could be by saying that they also had 18 1/2 feet in width,
and 6 1/2 feet in length. These were each centered with a
stute, or with nine Arabian... with a broad border
Tahalli... nine

We have several times expressed perhaps only our prejudices against concealing the base of statuary even by flowers; but the same objection would not apply to these sarcophagi. There is something not only instructive but pleasing and poetical, in associating the ideas of our last sleep with beautiful flowers. Few could be inclined to go so far as to recall that the same conured up idea

a caustic limestone, that ate up in a very short time all animal matter committed to its care. Even then we might moralise on the wonders of this world of change and progress, where life now must be sustained by life that was. The fine rich umbels of the *Agapanthus* seem to tell us that

even beauty must be sustained by a due portion of decomposition. Be that as it may, we must state that these beds in their beauty evinced the most careful and skilful management.

R. FISH.

(To be continued.)

THE LATE MR. DONALD BEATON.

MANY of our subscribers not having our first series, we induced to republish the very excellent portrait of our deceased friend, which is in the thirteenth volume of that series, and we accompany it with a very interesting relique,

the last contribution he had the power of writing for this Journal. It was written in answer to a note we forwarded to him. Paralysis seized him before he had returned it to us, and it has just been found among his papers.



CHANGING THE COLOUR OF THE PEA BY CROSSING.

I NEVER cross-bred a plant intentionally in my life, so I am not about mounting a pillar like Simon Stylites, and claiming myself an authority, but I have been a cross-bredder of poultry, and have observed facts there which lead me to hesitate from agreeing that it is "absurd" to think that the skins of Peas may be altered in colour by the man which fertilised them. For instance: Cochin-China hens lay buff-coloured eggs, but if they are associated with turkeys or Spanish cock the shells of their eggs frequently, for a time, are laid nearly white. Again, another fact we have observed, a white woman has white children, but if

her husband is a black man her offspring becomes dark-skinned.—February 3rd, 1863."

[The above is a most interesting fact, bearing directly on the question of changing the colour of the garden Pea by the influence of the pollen; and the two cases, as far as I know, stand isolated, the one in the vegetable and the other in the animal kingdom. The other fact adduced goes directly against the inference he draws from it, for to bring it within the analogy it is not the offspring of the white woman that would or should be the dark-skinned, but the white woman's own skin. It is not the offspring of the crossed Pea or second generation which the believers in Gärtner's cross ac-

knowledge, but the Pea itself. The Pea was crossed, and the cross changed that Pea, not the offspring of the Pea, although we may infer the offspring to be of the same colour as the parent. By that analogy it would be necessary to adopt the notion that the male influence in the animal kingdom changed the colour of the skin or coat of the female, not the skin or coat of their offspring, or second generation. Now, if we analyse the more plausible side of the question which is thus raised—the egg changed by the influence of the male, we shall be able, without any stretch of idea, to dispose of it as easily as of the other. The egg in the feathered race represents by analogy the pea-pod, not the body of the Pea; and to have a bearing on the question in hand, Gärtner's experiment would need to change the colour of the pod, not of the Pea. But the fact is, we can trace no direct analogy between the modes of fecundation in the two kingdoms; all we know is, the effect of the mode is the direct opposite in the two. Repeated approaches of consanguinity is a well-known cause of degeneracy in the animal kingdom, and the surest way of improving races in the vegetable kingdom—that is, improving flowers and fruits; and yet when we push the inquiry or the mode of improving to its ultimate, we find, or, at least, we have already found, that these improvements have been acquired at the expense of the health of that strain or race ere we reached the limits of the ultimatum or final stage of improvement, as florists could tell us from their records of their different "worts," every one of which has been getting less and more less healthy, and by consequence more difficult to preserve, from the first cross by in-and-in breeding.

This seems the best place for me to make a suitable apology to Mr. Darwin, and to ask a thousand pardons for my seeming contradiction; but I had not the slightest idea even of contradicting him, much less of discourtesy. I wrote hurriedly and very earnestly for a particular reason—well knowing that every word Mr. Darwin says carries great influence with it to the ends of the earth. I knew Gärtner was the least reliable of all the old authors; that he published the greatest absurdities about it, above all who wrote before him; that his first edition was the text-book of all who wrote upon crossing without experience in it themselves; and that it would be a thousand pities if Mr. Darwin lent the power of his authority to Gärtner's speculations, which have not advanced the art one single degree. It cannot possibly be an attack on an author for another to expose errors he might have fallen into. I have no idea, or any wish, but to speak the truth only about this author, when I affirm that nine-tenths of his nine thousand recorded experiments are nothing better than idle speculations. I am satisfied there are not nine of them out of nine hundred which would come exactly alike next year or next trial the same season, and such might be recorded a thousand-fold without helping the art of crossing to advance one single step. As the work of an amiable naturalist, and as pleasant reading, I have no doubt but Gärtner will be read as long as Sir Walter Scott. I only wish I could read him in the original, or that he had a good practical English reviewer instead of a highly scientific one.—D. BEATON.]

HEATING A GREENHOUSE FROM A DINING-ROOM FIRE.

IN reply to "A DEVONSHIRE VICAR," in your Journal of the 10th inst., page 372, I beg to suggest the following:—Some thirty years ago I recollect being in a room that was heated by means of the surplus hot air from the kitchen grate. It was, I believe, thus:—An iron tube about 1½ inch diameter commenced its course at the lower end, and on the side of the kitchen fireplace; it passed thence to the back of the fire, where it doubled upon itself, up and down, each end touching the former one to the full width of the grate, the whole forming the back of the grate. It was then carried through the partition-wall and made its exit by the side of the dining-room fireplace, the outlet of which was guarded by a slide, as also was the inlet on the kitchen side. Thus when the slides were open and a fire was in the kitchen grate, there was always a plentiful supply of hot air to the dining-room, which could be regulated by a slide in the dining-room.

WORK FOR THE WEEK.

KITCHEN GARDEN.

EVERY opportunity of favourable weather should be promptly employed in carrying out whatever digging, trenching, and draining have been marked out for completion during the winter months; if deferred until a later period severe weather may set in, and thus the operations may be retarded to the manifest loss of many advantages. *Brussels Sprouts*, when the head is cut the dead leaves should be removed, but none of the green ones, as they protect the young side shoots. The same may be said of *Scotch Kale* and other winter greens. *Cabbage*, take advantage of a favourable day to earth-up the autumn plantations. It not only invigorates but prevents them from being loosened by the winds. *Cauliflowers*, never neglect giving air daily to those under hand-glasses and in frames, unless during severe frost. If the plants are now elongated by an insufficiency of air they will be very liable to button-off. *Endive*, any that have been planted in frames should have air freely admitted to them to prevent rotting. *Mushrooms*, the beds out of doors should have a thick covering of straw, over which should be placed mats to protect them from wet and frost. When the straw is wet it should be replaced with dry. *Radishes*, on a dry warm border a few beds of Early Frame or Short-topped should be sown either alone or with the Short Horn Carrot. Cover the beds with straw or litter till the seeds germinate, when they should be uncovered every day when not frosty. A frame should likewise be placed on a gentle bottom heat for a sowing of the above to draw early. *Strawberries*, we do not approve of the practice of cutting off the leaves indiscriminately at the winter dressing, conceiving them to be designed by Nature for the protection of the buds which are to produce the future blossoms. On the score of neatness, the removal of such as are decayed will be sufficient; and to this, if done carefully, there can be no objection. Dig in these trimmings now with a portion of old hotbed manure between the rows, digging down only in the centre so as not to disturb the roots too much. The slight root-pruning caused by this process will be rather beneficial than otherwise, and the dressing will be placed just where the new fibres produced in spring will be able to profit by it.

FLOWER GARDEN.

If not already done, get all borders neatly trimmed-up for the winter. Valuable plants, as variegated *Hollies*, *Rhododendrons*, &c., if not growing as freely as it is desirable that they should do, would be benefited by a liberal allowance of rotten manure or well-decayed leaf soil applied as a top-dressing, covering it with a little fine soil, and working it into the ground towards the extremities of the roots. But *Rhododendrons* and what are generally termed American plants bear removal so well, that these, where not growing satisfactorily should be taken up, the ground well prepared by a liberal addition of peat or leaf mould, and replanted. While the winter continues mild the planting of deciduous trees may be proceeded with, providing the state of the land will permit of the operation being profitably performed. Deciduous shrubs may be pruned whenever there is time, except during severe frost. Many of the larger-growing plants will only require going over once in two or three years. Smaller-growing shrubs, as some kinds of *Cytisus*, *Spiræas*, *Deutzias*, &c., should, however, be pruned annually if a good show of flowers and uniformly-shaped bushes are desired. Secure shrubs and young trees from the effects of boisterous winds by stakes. Plant climbers, as *Ivies*, *Clematises*, &c., and train and support creepers against walls generally. Where walks are in good condition but have weeds still making their appearance on the surface, recourse should be had to hand-picking, and the use of the rake and hoe should be avoided at this season as much as possible. These instruments do more harm than good by breaking-up the surface, while the destruction of the weeds is not secured.

FRUIT GARDEN.

When orchard trees have been for some years left unpruned some of the branches will require thinning out; keep the middle of the trees open to admit air and to promote the formation of fruit-buds on the interior branches. Buds should not be allowed to become over ripe before being

used; also look over the whole stock as often as time can be spared. Any of the choice varieties that do not ripen properly in the fruit-room should be removed to a warm dry room for a few days, which will be found to improve them greatly.

FORCING-PIT.

Particular care should now be exercised as to the application of water, atmospheric humidity, air, and heat, the latter should be generally applied a little extra by day with air, and very sparingly at night for some time to come. Gentle fumigations with tobacco should be occasionally given, and a little sulphur applied, in a liquid state to the heating apparatus when moderately cold, but by no means when hot.

GREENHOUSE AND CONSERVATORY.

The supposed necessity of resorting to fires in greenhouses may often be obviated with great advantage to plants by the use of night coverings. Double mats, or whatever may be devised for the purpose, will, except in extreme cases, maintain a night temperature of from 35° to 40°, which is an amount of night heat sufficient for the ordinary occupants of mixed greenhouses during the winter months. Stop the leader of every shoot of the large plants of Pelargoniums which are wanted to be in bloom in June, and also of the young plants struck the past summer, to cause them to push side shoots. *Tropaeolum tricolorum* and the other tuberous roots must now be potted if to bloom next season. Encourage *Tropaeolum Lobbianum*, it will bloom through the winter; also *Salvia splendens*, fulgens, gesneriflora, they are fine for autumn and winter bloom.

PITS AND FRAMES.

As a change from the present to severe weather may come on suddenly, be provided with ample means for covering these structures should it occur. Mignonette and Neapolitan Violets will require abundance of light and air to keep them from damping. Pot *Iris*, and place them in a cool frame, or plant out of doors in a warm place. *Cinerarias* may be kept for some time longer in a frame, but must be protected from frost.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

The fine dry days were chiefly used in clearing away the old stalks of Cauliflowers, old Pea-haulm, and Pea-stakes, as we could not get on the ground before on account of the wetness. Took up a piece of Sea-kale and Rhubarb, and placed in the Mushroom-house in pretty-well-spent manure that would give a bottom heat of about 75°, the atmosphere of the house being about 55°; but most likely we will raise it to some 5° more for a few days, as we shall want an extra supply of Mushrooms next week. If the Sea-kale, &c., do not come as soon as we wish, we will cover it over with straw, or place some hoops over it and a mat covered with hay, so that the air in the enclosed place shall be warmer than the general air of the Mushroom-house; for though that may be raised in temperature now and then for definite purposes, we always imagine that if the temperature is long above from 55° to 60°, the present gain will become a future loss, as the beds will sooner be exhausted. In removing our heap of Mushroom-spawn to a dry shed there were a few bricks not sufficiently spawned, and to avoid the covering-up from rains, &c., out of doors, we placed them in the Mushroom-house, and covered over with a little hay, having no doubt but that in a fortnight they, too, will be fit for placing in their dry quarters. Nothing tends to make the spawn exhaust itself more than being allowed to remain long in a damp place. Good spawn is best known by its pleasant Mushroom-like smell, and by the whole of the pieces being permeated by a whitish substance in hair-like fashion as to size, for if the filaments are as large as sewing-thread, these individually are too far gone for running in a bed. Even such may produce Mushrooms in a favourable position, but they seem to have lost the power of generating and filling the mass of a bed with productive spawn. Gardeners have rendered the culture of the Mushroom by means of its spawn a matter pretty well as certain as the obtaining a good Cauliflower. Who, by means of spawn or plants, will help them to attain the same proficiency in the culture of the Truffle and the Morel, which, for all the higher branches

of cookery, are as much used as the Mushroom? One advantage they would have over the Mushroom is that when obtained at the right time they keep good for a long period. Had we more time we certainly should like to try their cultivation in different ways. "It cannot be done, sir," should seldom be resorted to unless in a demonstrated impossibility. Owing to the fugacious character of the Mushroom it often happens that you may have a bushel of them when they are of little use, when there is nobody of consequence to eat them; and then when a large party suddenly comes, there may be none or only a few to get, though they might have been had by the extra fillip spoken of above if the gardener had only known. We expect that ladies and gentlemen would find that much of the solid-resistance-points which they present to their staying friends would give but imperfect satisfaction, unless the artiste of the kitchen knew some time beforehand, so as to have the meat, the poultry, and the game in the best possible order. When it is not considered worth while to let the gardener know anything of these great events beforehand, it is just a matter of chance if the products of the garden come in when most needed. A little more of a clear understanding in such matters would be to the benefit of all concerned.

The heap of chopped Hollyhocks, chopped Asparagus, and flower-stalks, mixed with leaves and dung, has come in most useful for slight hotbeds, and for placing a covering over the border of an early vinery, the surface of which had been covered with a thin coat of tar and sawdust. The mild hotbeds will do for placing some fresh hotbed bedding plants in, and just setting in movement the roots of some Vines in pots.

We have been so taken up with cleaning, that with the exception of stirring the ground amongst young Cabbages, Cauliflowers, &c., and giving a little more dry earth to Celery, with a little ashes or burnt earth and rubbish next the stems, we have done but little in moving the ground, though there could be no better weather for doing so. In many gardens, however, what ought to be done must wait until there is time. We always prefer moving ground, if possible, in fine, bright weather. Trenching and ridging cannot be better done than now. In light ground, trenching with a rough surface we consider to be better than ridging. Ridging is always best in stiffish soils, whether the ground be turned up one, two, or three spits deep. Those who have large places, and like us begin to be a little deficient in memory, should keep a digging and trenching book. In trenching, every second or third year it is advisable to break the subsoil, and bring a little of it to the surface. A great deal would do mischief; a little will always do good, and, exposed during the winter, it will mix well with the older soil in spring. This plan is especially suitable for all long-rooted plants, as Carrots, Parsnips, Beets, Salsafy, &c. In old gardens the soil is apt to become too rich for them, which encourages them to spread into finger-and-thumb-like roots, instead of one fine large one, and as straight as an arrow. The digging down, rather trenching down, such ground three spits in depth, or two spits if the soil is shallow (in either case bringing up an inch or two of the subsoil to mix with the soil that was lowermost, but now placed on the top, in the ridge state), would, if the surface were moved once or twice during the winter, render the soil nice and friable before spring, and the richest soil being at the bottom, the roots would be inclined to go straight down towards it. Such old soil would also be greatly benefited by a thin surfacing of quicklime, or burnt clay; but the most surprising effects will often be produced on such old, rich ground by a dressing of peat earth, so far as Carrots are concerned, using a dressing of lime with the peat. If even for this crop alone the ground were so prepared, the deep stirring and bringing a little fresh undersoil to the surface would, in course of time, take all the garden in regular course.

It may here be worth mentioning, that in trenching and ridging now, the work should be done differently from the way it should be done in spring. At the latter period it would be necessary to break the different spits as they were turned over. At this season it is best to take rather thin slices on the spade, and turn them over in a rough state, so that the air and the frost of winter may freely penetrate. From the crumbling-down it will be solid enough before the

spring comes. It is next to useless to describe such a simple operation as trenching or ridging two or three spits deep. An opening should be taken out of the necessary depth, and 2 feet in width. The bottom of the trench should be loosened with a pick if necessary, then turn over the top spit of the next 2 feet into the bottom, follow with another or a double spit as deemed advisable, and make the surface roughly level, or, in all grounds at all stiff, lay the last spit carefully up in a ridge as steep as possible, as the sharper the angle at the top the more will the air and the frost penetrate, not only the ridge, but the furrows between down to the bottom of the trench. If a sharp frost should penetrate 2 or 3 inches, it is a capital plan to turn these ridges over, and thus the whole surface soil is frosted, and no better employment could be found for a keen frosty day. It must be done before the frost is so hard as to prevent a good sharp spade penetrating when there is a sturdy arm and a firm foot behind it.

Talking of frost, however, seems somewhat out of place in such fine pleasant weather as we now have, but a little of it in moderation will soon be very acceptable. The well of our old-fashioned ice-house, without the assistance of a bit of straw or any other covering has lasted us now two years, but has failed at last. A little mud has collected in the bottom, but as it has become dry that shows there is no stagnant water; and, therefore, instead of making the well any deeper we will merely place a few faggots in the bottom before filling again, when we have the chance. We might have had a little in November last year, but it was supposed it would disturb the game before a shooting party. For a similar reason our tree leaves will be pretty well gone before we can take them. Ice is, no doubt, a great luxury, especially in summer, and is most valuable as one of the chief curatives in some of the worst afflictions to which humanity is subject, but it becomes a troublesome and an expensive affair when it has to be brought from long distances. Is it impossible to bring more into common use those chemical freezing mixtures of which we read so much, and which we believe some of our greatest confectioners use largely? Perhaps this may catch the eye of some one able to give particular information, as often when new modes are discovered it may be years and ages before these are brought into everyday practice.

FRUIT GARDEN.

Very much the same as last week, only we put a little more litter, and we would have given more if we could over the border of the late viney, and put the old sashes and straw covers over that again, our object being to keep the leaves green as long as possible. At one end the leaves are becoming yellow, and there we have mostly cut the fruit. If we could have kept the roots a little warmer the ripening of the leaves might have been a little more delayed, and, consequently, the fruit would have hung longer in a fresh plump state. As soon as the leaves turn yellow they must be removed, and after they are removed more care must be taken on frosty nights, as the bunches are more easily frozen when there are no leaves to shelter them. We trust the bulk of our leaves will be greenish for some time in this late house. Of course, all laterals to speak of have been removed some time ago, except some little twigs which furnish a few small leaves for garnishing on particular occasions. We have already stated that we put about a foot of our mixed fermenting-heap on a Vine-border, to which we will apply heat a month hence inside. We want the roots to precede the tops a little. We would also have placed wooden covers on the top of the litter if we could have commanded such a convenience, but satisfied ourselves with a little long litter, as we could not do better.

ORNAMENTAL DEPARTMENT.

Much the same as last week. Never had so much labour in clearing the wrecks of the flower garden, the beds were so excessively thick and strong, notwithstanding the dry summer we had. However, there will be more for the fermenting-heap; but there has been so much that the men seem much more tired of it than they were of the planting time.

A stray remark about old hotbeds and frames for bedding plants has brought us several inquiries; and we will meet

number of them, have nothing to do with the old hotbed if you can help it, but set the frame on a piece of high, dry ground in preference. If this had been the month of July, this is the plan we would have recommended: Choose your position for the frames, raise the ground 6 inches above the level, for a space wider by 2 feet, and longer, too, than the frame, firm it well, let it slope from back to front 6 inches. After firming it well run it over with tar about the thickness of a new halfpenny, throw some gravel and sand over it, and it will be as hard as adamant before you want it in the end of autumn for your plants. Place your frames on them, and for a lasting job it would be best to surround them with a bank of earth or soil 15 inches wide at bottom, and 9 inches at top, beat it firm, make it smooth, paint it with tar, and for 2 feet beyond, and cover with sand, road drift, or fine gravel. This will throw all rain away from the frame, and no moisture will rise from the bottom inside. Recollect that moisture and damp are the worst evils in winter. You cannot do the ground inside with tar now, it would kill everything, but the outside may be so done, if care is used in air-giving; the inside may be elevated with dry earth, chalk, &c., or it might be done with earth smoothed and coated over with pitch, which would soon dry, and emit no disagreeable effluvia, and in either case dry gravel or dry ashes rough would do inside. In such a case the watering should be so done as not to spill a drop; in fact, the pots should be taken out to be watered, and be then replaced when drained. In severe frost a little litter might be thrown over the earth banks, and, of course, the glass must be duly protected. In very damp weather a piece of lime might be put inside, or a bottle or two with warm water, which, with air on, would cause a more rapid circulation inside, and make the atmosphere drier. If earth is not used, the next best would be straw neatly tied against the wood, and the sashes long enough to throw the water past the straw.

The best covering for the glass of such pits would be wooden covers made to fit to each other; the next best would be asphalt fixed to frames; the next best tarred cloth or frigi domo fixed to poles, which two people can easily manage. Good waterproof covers 6 feet by 4 are also advertised. We have supposed the above frame to be about 6 feet in width.—R. F.

COVENT GARDEN MARKET.—Nov. 21.

The supply both of fruit and vegetables, in consequence of the mildness of the weather, continues to be ample, much more so than is usually the case at this season. Pines are in great abundance, and prices have a tendency to decline. Of Grapes the supply is quite sufficient for the demand. Melons from abroad, which are the only ones now in the market, are plentiful. Apples and Pears consist of the same sorts as mentioned in last week's report. The Potato market is still heavy. Of Asparagus a few bundles may now be had. Cut flowers principally consist of *Roses*, *Violets*, *Chrysanthemums*, *Mignonette*, *Geraniums*, and *Chinese Primulas*.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples..... $\frac{1}{2}$ sieve	1	6	4	0	Mulberries.....quart	0	6	0	0
Apricots.....doz.	0	0	0	0	Oranges.....100	4	0	10	0
Figs.....doz.	0	0	0	0	Peaches.....doz.	0	0	0	0
Filberts & Nuts 100 lbs.	55	0	75	0	Pears.....bush.	7	0	10	0
Grapes, Hamburgh lb.	1	6	5	0	dessert..... $\frac{1}{2}$ sieve	2	6	5	0
Hambro's, Foreign	0	9	1	6	Pine Apples.....lb.	3	0	6	0
Muscats.....	3	0	6	0	Pistons..... $\frac{1}{2}$ sieve	0	0	0	0
Lemons.....100	6	0	10	0	Quinces.....doz.	1	0	2	0
Melons.....each	1	0	2	6	Walnuts.....bush.	14	6	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus.....bundle	6	0	10	0	Leeks.....bush	0	3	0	0
Beans, Broad.....bush.	0	0	0	0	Lettuce.....score	1	0	2	0
Kidney..... $\frac{1}{2}$ sieve	0	0	0	0	Mushrooms.....pottle	1	0	2	0
Beet, red.....doz.	1	0	1	6	Mustd. & Cress, punnet	0	2	0	0
Broccoli.....bundle	0	9	2	0	Onions.....bushel	2	0	4	0
Cabbage.....doz.	0	9	1	3	pickling.....quart	0	6	0	0
Capicums.....100	1	3	2	0	Parsley.....bush	0	2	0	0
Carrots.....bunch	0	6	0	8	Parsnips.....doz.	0	6	0	0
Cauliflower.....doz.	2	6	4	0	Pears.....bush	0	0	0	0
Celery.....bundle	1	6	2	0	Potatoes.....sack	5	0	0	0
Cucumbers.....doz.	6	0	12	0	Radishes doz. bunches	1	6	2	0
Endive.....score	1	3	2	6	Rhubarb.....bundle	0	0	0	0
Fennel.....bunch	0	3	0	0	Savoy.....per doz.	0	0	1	6
Garlic and Shallots, lb.	(	0	0	0	Sea-Kale.....bushel	2	0	0	0
Goards & Pumpk., each	(	0	0	0	Spinach.....sieve	1	6	2	0
Herbs.....bushel	(	0	0	0	Tomatoes..... $\frac{1}{2}$ sieve	0	0	0	0
Onions.....bushel	(	0	0	0	Turnips.....bush	0	0	0	0

TRADE CATALOGUES RECEIVED.

William Bull, King's Road, Chelsea.—*List of New, Beautiful, and Rare Plants.*

B. Whitham, Reddish Road Nurseries, Stockport.—*Catalogue of Forest, Fruit, and Ornamental Trees.*

Chivas & Weaver, Chester.—*Priced List of Forest, Ornamental, and Fruit Trees, Evergreens, Roses, &c.*

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

V.B.—Many questions must remain unanswered until next week.

Dew (H. P. B.).—Dew does not rise from the earth. It is a deposition of atmospheric moisture. You will find an explanation of that and other phenomena interesting to gardeners in "The Science and Practice of Gardening," which you can have free by post from our office for 3s. 4d.

DISSOLVING BONES (A Subscriber, Cheshire).—The cheapest mode of using sulphuric acid is by the carboy. It is very cheap, and any chemist could supply you. The following proportions and directions will be a sufficient guide:—On a small scale, 6 lbs. bone dust, 3 lbs. oil of vitriol, 1½ lb. water. Sprinkle the water on the bones first, and then add the vitriol. Be careful, for it is very corrosive. Use a cask large enough to hold twice the quantity. As much ashes or water may be mixed with the dissolved bones as will enable you to sprinkle it over the plot of ground regularly. The above quantity of bones and vitriol would be enough for 100 square yards.

SCREEN BEFORE A ROAD (Hesperie).—Laurels will do very well if you do not wish for a tall screen. Arbor Vitæ grows somewhat taller than laurels. We would plant Laurels, Portugal and common, and Hollies if we wanted a low screen, and add Firs at the back if these were too low. From now until April, in mild weather, is the proper time to plant them. You are rightly informed, Laurels grow fast and soon attain a moderate height. To shelter the house the various Conifers are well adapted for the purpose; but, instead of planting Firs exclusively, we would plant but one or, at least, only two of a species. They would be rather more expensive, but that would be amply compensated for by the additional interest they would afford you. You would have many and varied forms, high, we think, would please you more than monotony. Fir, Pines, Cedars, Cupressus, Taxus, Araucaria, Cryptomeria, Picea, and Wellingtonia gigantea, can be had at any nursery for a small sum. The beginning of March is a good time to plant them, but we prefer moving them from September and October to the middle of November. The Laurels move at when about 2 feet high, and Firs at any size providing they have been duly transplanted. Three feet is a good size, but those which are less are cheaper and are transplanted with greater safety.

BONE DUST FOR A VINE-BORDER (A Constant Subscriber, Yorkshire).—The bone dust should be applied in March, and the guano at the same time. The bone dust should be neatly worked into the border without going so deep as to injure the roots. The guano had better be spread on the surface twice—in March and May. Rains would wash its fertilizing properties down to the roots; but should you dig it in there is a probability of its reaching the roots in its pure state and destroying them. We think it would do them good, unless the roots are deep, when lifting would be better.

MISTLETOE ON A PEACH TREE (Idem).—We never heard of Mistletoe owing to the Peach, either in Yorkshire or in any other locality. It is usually found in Yorkshire on the Crab Apple, Thorn, Poplar, and Lime tree. We have not seen it on the Oak, Ash, Elm, nor any other common tree. We should be obliged by correspondents stating whether they have and it on any of the Conifers, as there is a prevalent opinion that will not grow on trees affording resin. Though it grows freely on the common Thorn (*Crataegus oxyacantha*), we failed to make it grow on any of the North American species. We should also be obliged by any information relating to Mistletoe found on any description of tree other than those cited.

STEPHANOTIS FLORIBUNDA AND IPOMÆA HORNEMANII PRUNING (An Old Subscriber).—The Stephanotis may be pruned at once. The pruning is simply taking out the shoots and cutting out the weak, old, and useless parts. You may probably obtain a second bloom, but we would advise you to be content with one rich display, as too much excitement has a tendency to weaken the plant so subjected. The Ipomæa may be cut back to some prominent point, the nearer the root the better. You may do it now, but you must wait the plant a period of rest. Three months are not too long, yet it does greatly well after a rest of six weeks. The longer the roots rest the larger growth and finer bloom may be expected from them.

LOW-WATER PIPES AND ROOTS (Old Subscriber, Nottingham).—The pipes should be at least 1 foot from the stems of your Peach trees. Three inches are near the stems to place hot-water pipes. From 9 inches to 1 foot is the distance we recommend in your case. Vine roots are situated at about 2 inches from the surface, some deeper and some shallower; but, as a rule, in 1-inch borders they do not run deeper than 20 inches, whilst in some cases they penetrate to a depth of 4 feet.

BROOKHOUTH GRAPE (J. F.).—As the Fruit Committee were not requested to do more than say whether or not they considered Mr. Denham's Grape the Muscat of Alexandria, they did not express any opinion upon its identification. It would, indeed, have been impolitic to have done so in the absence of further information, and of seeing the fruit growing on the Vine. There is reason, however, to believe that it is the true White Tokay; but upon this point it would be useless to assert anything without having had an opportunity of examining it thoroughly.

ALOCASIA MACRORHIZA VARIEGATA PROPAGATING AND MANAGING (One of the Fry Company).—It is propagated from suckers. These rise near the stem of the old plant. The soil is removed down to where the suckers rise from the root, and the latter is then cut off with a sharp knife, taking the least touch of the old root along with it. This operation is best done in the process of repotting the old plant. Use very turfy peat and loam from rotted turves half, leaf mould a quarter, and bits of charcoal (broken fine for cuttings), and not larger than a hazel nut for established plants), and silver sand the remainder. In this the cuttings are placed, if very small, in 60-sized pots, and the others in a larger size, just sufficient to hold them without cramping. A gentle watering is given, and the pots being plunged in a mild bottom heat of 75° to 80°, place a bell-glass over them. Keep close and shaded for a few days, and the suckers will soon become established. Gradually harden-off and grow on in the stove, potting as often as the plants fill the pots with roots. Perfect drainage is essential, and a moist close atmosphere must be maintained to have the plant in perfection. It is hardly possible to give it too much encouragement; therefore the shifts should be frequent, the watering copious, no dribbling but a thorough wetting. It must be shaded from strong sun, and kept as near the glass as its size will permit. In future pottings the charcoal should be more plentiful, using less sand—in other respects the compost recommended for raising the plants is suitable. A winter temperature of 60° to 65° at night, with a rise of 10° to 15° by day, and one in summer of 70° to 75° by night, and 85° to 90° by day, will grow this plant something like a monstrous Victoria Rhubarb plant with leaves nearly a yard across. Plenty of moisture, a sweet atmosphere, and a high temperature, with plenty of pot room, are the main points in its cultivation.

SPERMATOPHYTES LATIFOLIA PROPAGATING AND MANAGING (Idem).—This is propagated from cuttings of the half-ripened shoots. If the cutting has three joints, one below, inserted in the soil, and another above, with the apex or growing point, they are just the sort. These, inserted singly in small pots in a compost of peat and silver sand, root rather freely in a bottom heat of 75° to 80° with a bell-glass over them. They will be well rooted in about six weeks, when they should be hardened a little prior to their being placed in the stove. The heat of an ordinary stove suits it. The plant requires a moist atmosphere, and shade from very bright sun. A compost of turfy peat half, light turfy loam and leaf mould in equal parts of the remainder, with a liberal admixture of silver sand is the most suitable soil. Perfect drainage must be provided, and the plants require potting when the pots become full of roots.

VINEYARDS, PEACH-HOUSES, &c. (C. Pool).—In articles by Mr. Thomson, Mr. Fish, and others you would see much on the arrangement of houses, and there is also much particular matter at page 400 in answer to correspondents. With such a *carte blanche* as you give, and no particulars, we might rewrite a volume and then not meet your individual case. See description of houses at Keels and Trentham. We think your first house will do very well. We presume the roof has a steep slope. A steep roof is also best for late Grapes. Your late house should be allowed to break naturally, or rather be kept back from breaking. It will need fire heat chiefly when the Vines are in bloom, and then in the autumn and winter to keep the Grapes from damping. These are the cheapest Grapes, and, perhaps, the most useful, as they come in when other fruits are scarce. Fine plants are grown in lean-to houses, but span-roofed houses are best—unless in cold northern districts, when a wall on the north side, or part of the north side so as to make a hipped roof, is an advantage merely on the score of warmth. Where fuel is plentiful the span roof is the best and most convenient.

CLIMBERS FOR WALL (W. B.).—*Lonicera aureo-reticulata*; *Pyrus japonica*, ditto white; *Pasiflora coerulea*, and *P. Neumannii*; *Wistaria sinensis* and alba; *Magnolia grandiflora*; *Lonicera brachypoda*, flexuosa, and fragrans; *Jasminum nudiflorum*, officinale, revolutum, and Wallianianum; *Aristolochia alpinum*; *Bignonia grandiflora*, *B. radicans* major; *Clematis aurea* grandiflora, *C. flammula*, lanuginosa, odorata coerulea, and Sieboldi; *Atragene austriaca*. In addition to these there are numerous climbing Roses.

FLOWERING SHRUBS OF LOW GROWTH (Idem).—*Andromeda floribunda*, and formosa; *Berberis* of sorts; *Alibsea frutescens*; Tree Peony, many kinds; *Buddleia globosa*; *Potentilla floribunda*, and fruticosa; *Cistus*, several varieties; *Cytisus* in variety; *Deutzia gracilis*, grandiflora, and scabra; *Daphne*; *Furze* (double); *Leycesteria formosa*; *Ribes aureum*, sanguineum, var. album, and var. atropurpureum; and *Spiræa* in great variety.

EVERGREENS FOR CENTER OF BEDS (Idem).—*Cupressus Lawsoniana*, *Juniperus stricta*, and *Thuja aurea*. The last we think would answer your purpose better than Bay trees, which are not hardy everywhere.

SOIL FOR VINES IN POTS (R. G. B.).—We do not recommend pressing the soil very hard in making a Vine-border. The soil should be packed rather firmly together with the fork, but no treading or ramming must be allowed. The soil will become quite firm enough in time without any ramming or pressing. The author of the book you name is not the same person of the name that writes for this Journal. The book, however, is a good one.

REPOTTING CALCOLARIAS, &c.—LOBELIA PAXTONIANA (Nescoe).—In your circumstances it would be as well to defer repotting until the change of the day—say the 1st of January, then give a small shift—say into seven or seven-and-a-half-inch pots. You cannot well strike the Lobelia now without more help than a cold frame. Encourage growth and take off cuttings as soon as you can get a little heat in spring. You might easily make a little propagating-box inside of your living-room. We cannot say where you can get *Chrysanthemum* seeds. The raisers are not likely to part with their best seed. They are raised easily from seed.

WINTERING GERANIUMS IN A CELLAR (Nescoe).—We prefer taking off the soft parts of Geranium-shoots, removing all the leaves, dipping the tops left in quicklime, and packing the roots in dryish earth, or moss neither dry nor wet, for keeping in a cellar. The great thing is to preserve vitality but to prevent growth.

CYATHEA DEALBATA PINNULAE TURNING BROWN (C. S. N.).—The tips of your Fern fronds may be brown from moisture lodging on them during the night, which is evaporated rapidly on the presence of light in the morning. Too little water at the root, a current of cold air, and too dry an atmosphere will also produce the same result. Your plant is kept at least 20° too warm. A temperature of from 40° to 50° is quite warm enough for this Fern in winter. We keep ours in a cool house from which frost is only just excluded, and it is little short of 6 feet high, and a very young plant. Try a cooler temperature and a more regularly moist atmosphere.

BACK WALL OF A VINEY (W. M.).—Never think of withholding from giving us trouble. Such letters inform us of what our subscribers want, and thus enable us to please them as we would like to do. But, of course, in order to be able to give general satisfaction our correspondents should make definite inquiries as you do, and even then send only few inquiries at a time, which we are sure they would do if they would recollect that there may be hundreds if not thousands in a similar position to themselves. We think you exaggerate in speaking of the "hardness of our knocks" even in such cases, for we never intend to do more than ask for moderation. We fully appreciate your object in desiring to keep your back wall as low as 6 feet, as few advantages are worth having that could be construed into a source of annoyance by a neighbour. We presume the whole of the border for the Vines is to be inside, and that for such a small house will be an advantage. We have no doubt at all as to the plan answering with your hipped roof at back. That hip could be hinged to open, or you could have a double ridge and a space of 9 inches or so between them, with a cap to move as desired, or a ventilator could be suspended underneath the cap, and openings left on the side. The moving of the hipped roof would be the simplest. If you mean to move your sashes, the having three or even four bars would be much the best. If the house is on your own property why not have a fixed roof? Sash bars 1½ by 2½ or 3 inches would be quite sufficient. We forgot already about the point in the book you refer to; and here we suppose we must give a knock in the shape of a hint, that our friends must not suppose that we have long memories, so as to know where to turn for references without any figures of page or volume. We presume, however, that you mean to follow the plan of houses for the million. In such a case you will need little air at back; but 3 or 4 inches must be left between each sash, and the place covered by a ventilator, to be moved less or more at pleasure. If we can help more we shall be glad.

VINES UNDER SHEET-GLASS BURNING (E. P.).—Give plenty of air to the Vines, especially at the top, and a little the first thing in the morning. Then look over the glass carefully, and on every scar or node of any size, dab a little paint or liquid putty. In most cases the air will remedy the evil; but the knots, if at all large, will burn the leaves. They concentrate the rays of the sun to one point.

FORCING A ROW OF SEA-KALE (D. T. W.).—Clear away all the old leaves, place a cone of ashes over the heads of the Kale, cover with pots, boxes, or merely sticks and strawbands, dig out a slight trench on each side of the row, and fill the trench with hot fermenting dung. Cover all over with leaves or litter so hot that the enclosed space will have a temperature of about 60°, and not more. The heat at the roots may be a little more. We are supposing that you mean to force the row where it stands. If taken up a dark place anywhere, with an average heat of 60°, would do. For instance, make a slight hotbed, take up the plants and put them in it, and cover with an old box or chest turned topsy-turvy, or make a box of old slabs and cover all over. By this plan a barrowload of fermenting manure will do as much as a good cartload out of doors over the row. The Strawberry pots will do well in a cold frame; they will do so plunged in the border protected from severe frost, or built up as described in "Doings of the Week" last week. There is no book on the questions you note equal to the lucid articles in this Journal. Mr. Fish commenced a series of such articles, but other matters have kept them in abeyance. You will find full particulars of all such matters in "Doings of the Last Week."

GREENHOUSE FOR WINTERING GERANIUMS, &c. (G. H.).—We could have advised better as to internal arrangements had you given us the height of the apex of the roof and height in front or sides altogether. Rough plate glass will be best for the roof at all times, and especially in summer. The sides may be done with common plate. If expense is an object, common plate about 2d. per foot will do well enough, and the light might be dulled in summer. See "Doings of the Last Week" the other week and description of Keels Hall. The fire taken right through the middle of the house, and its top forming the pathway, would be the cheapest plan of heating. A small boiler and two pipes all round would be the best. If the roof is low a pathway down the middle—say 3 feet wide, and a bed on each side 4½ feet wide—would be the simplest mode of arrangement; but the plants at the sides could not be so well attended to or examined as if they were nearer to the hand and eye. To make the most of such a house—that is, to yield the greatest amount of gratification—we would have a shelf on each side, 18 inches wide, with the heating-pipes below as far as the doorway, the shelf also going round the farther end, then a walk all round of 2½ feet, and a table or platform in the centre of 4 feet. This might be flat, or you might make it into a stage with a raised shelf in the centre, and two or three on each side. It would have been better if the house had stood north and south, but it will do very well as it is. The raised stage would, perhaps, be best if the apex of the roof were as much as 10 or 12 feet in height. A vast number of things could be housed under such a stage in winter.

NAMES OF FRUIT (Star).—The Pear is Wormsley Grange, and the Apple Colonel Vaughan. (A Reader, Banffshire).—2, Kourré de Rance; 3, Ne plus Meuris; 5, Figue de Naples, will not do so far north; 6, Chaumontal. Others not known.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE BIRMINGHAM TEN-SHILLING DAY.

The following paragraph in your paper of last week, quoted from *The Midland Counties Herald*, cannot fail to excite astonishment and suspicion:—"This year the public will be admitted on Saturday the 28th inst., the day on which the Judges make their awards. The reason for this innovation is that some exhibitors are so dissatisfied with the

the judging should be conducted in private, and the Council have, therefore, determined to give the privilege on payment of an admission-fee of 10s. It was deemed necessary to fix the admission-fee thus high in order that the Judges might not be impeded by a throng in the performance of their arduous duties, and also not to interfere with Monday, the day of the private view. The poultry, however, will not be exhibited until Monday."

The necessity for public judging presupposes dishonesty on the part of the Judges, but it is a question whether under any circumstances the remedy is not worse than the disease. Under the circumstances above quoted it is a positive dishonesty. Either the judging should be public and all exhibitors admitted by special tickets, or it should be private and all exhibitors excluded. The admission of a few for a fee of 10s. implies either weakness or unfairness on the part of the Council. They are either overawed by the wishes of "some exhibitors" who have expressed dissatisfaction, or else, for some reason best known to themselves, they wish to give an unfair advantage to "some exhibitors" who are disposed to pay for it. It is in effect the golden key to be used without secrecy. The reason given, that it is to avoid inconvenience to the Judges is simply a sham. There is as much inconvenience to a Judge from fifty excited and privileged exhibitors as from a hundred.

Let me ask the Council if they will permit me to make any alterations in my entries. They certainly will not. Why, then, should they make any change in the regulations under which those entries were made? I certainly would not have entered anything at Birmingham had I known of this 10s. privilege, and I protest against such a breach of faith as to subject me either to a tax of 10s. or to the loss of a privilege which may be used very materially against me. The meaningless remark that "the poultry will not, however, be exhibited until Monday" neither throws poultry exhibitors out of court nor guarantees their safety. It does not even say that the same principle will not be applied to that department. Perhaps it is intended to delude the unwary into such a supposition; but if the principle be admitted into one part of the Show, what is to prevent the Council by a stroke of the pen granting the already privileged "upper ten shillings" another privilege?

This decision of the Birmingham Council amounts to an admission that the Judges are dishonest, whilst it toadies to the wishes and interests of "some exhibitors." I am inclined to say, despite this Birmingham admission to the contrary, that the Judges at the great shows are men of strict honour, and I do not know why this mead of praise should not be awarded to those of smaller exhibitions. I am quite willing to admit that there are Judges who sail under false colours, who are swayed by influence and self-interest, and care little for the results. I do not believe that public judging will prevent this. There is as much to fear from the excited interference or impeding (as the *Midland Counties Herald* calls it) of exhibitors, as the deliberate unfairness of Judges. How an honest Judge can fairly and exactly decide the merits of a multitude of pens or exhibits of nearly equal merit in a crowd of exhibitors of every variety, I cannot tell. I do not believe that an iron-nerved man could do it well; a nervous and very conscientious man would inevitably be flurried, and peculiarly liable to mistake.

If the Birmingham principle is tolerated for a moment it may, and probably will, spread to other shows, and then the groans of your correspondent, "AN EXHIBITOR IN A SMALL WAY," may have some foundation. Those who cannot be present, and those who do not choose to pay, will grumble that their interests should have been watched by the "upper ten shillings." I am determined to have something for my money, and anticipate a treat, which I may communicate to you.—EGOMER.

BREEDING EARLY CHICKENS.

Those who breed early chickens—and whether for exhibition or the table, we think they are wise who do so—will now begin to prepare their pens, and to select their breeding-stock. It is not too early to do away with the pernicious custom that prevails in most yards during the

autumn. The period of separation has not been certainly defined, nor the time that must elapse after the running together of all breeds before the produce of a pen can be depended upon. In our opinion, if eggs are to be set in January, the birds should now be all separate. It is unpleasant to find when the hen comes off that the Spanish have an indisputable relationship to Dorking; and that there is more than suspicion there has been a *mésalliance* between Hamburgs and Cochins. This early separation may involve, perhaps, a little more daily labour, as birds in confinement must give more trouble, if they are properly tended, than those that are at liberty. Where, however, they are judiciously treated, and the supply of food, &c., is assimilated as nearly as possible to that they would get in a state of nature, we are not sure that fowls, with the exception of one or two breeds as Dorkings, are not as well in good roomy pens open to the sun as they are at liberty during the midwinter months, when the ground is barren of food, and the night occupies two-thirds of the twenty-four hours.

Our motive for treating this question is the number of queries we have at this season of the year, asking how long fowls of different breeds that have been running together should be separated before their eggs may be depended upon. It is a vexed and undecided question; but seeing that failure is irremediable during the current season, and that January or February chickens can only be hatched in those months, we advise immediate separation. The pens should be made afresh. All the holes and dusting-places the fowls have made during the summer and autumn should be filled up, and the surface levelled in such a way that the water shall run off during the winter. A good mound of sand should be made in a sheltered spot. If road-grit can be had, so much the better. It is always dry, and the fowls like it much. It is the best material we know for pens.

HULL EXHIBITION OF POULTRY.

It required a considerable display of resolution to carry out a Poultry Show at Hull, with a probable amount of success, at a date just preceding the Shows now so nearly approaching at Birmingham, Brighton, Leeds, Darlington, Manchester, and a host of minor meetings of like character. Yet none who visited the Hull Meeting on the 18th inst. could express a contrary opinion, than that as a whole it was a good one. It was evident, even at first sight, that chickens just at this time of year have great advantages over the old birds for exhibition purposes, and will do so for the next month to come. This was apparent in every class where such entries competed together. In Game fowls this superiority was necessarily even more developed than in some of the other breeds. Old Game cocks are not, as yet, sufficiently recovered from their moult to handle with the firmness of feather required; the young plumage being still in most cases only partially matured, and the pen feathers so full of sap, as to tend greatly to encourage the cannibal-like propensity, to which Game fowls especially are most prone, of actually eating each other piecemeal. We noticed several birds that were suffering from this morbid habit, and that, though evidently enduring intense pain, offered but little opposition to their mates, even though the flesh was actually being torn atom by atom from the bone. It is well just to remind amateurs, that fowls having once contracted this vitiated taste for flesh and pen-feather are rarely so far broken of the destructive habit as to be trusted again in close confinement, also that the injured birds in very few instances ever recover their plumage in perfection. It is, therefore, a rule that may be considered as universal with all kinds of fowls—they should never be closely confined till the feather is hardened, as well as replaced, or the bad policy of sending them to shows in that condition can only entail both loss and disappointment.

At the Hull Meeting the whole of the labour part of the affair lay on sadly too few hands, for, as at too many shows, the Committee seemed to dwindle into the smallest limits, when work, absolute "putting the shoulder to the wheel," most required it. This is a failing very generally complained of on all sides, and we think the promise "to help," ought to be scrupulously observed (or withheld) at the time

of the first formation of any poultry committee meeting. Another hint to exhibitors may here be usefully enforced—viz., strict compliance with the rules of the prize schedule issued solely for their direction by each Society. The intending exhibitor should in every case give this an attentive perusal, as different rules are enjoined by different Societies. Want of attention to this point alone caused several pens to be at once "disqualified" at Hull, among which was most decidedly the best pen of Grey Dorkings in the whole Exhibition. It must be borne in mind, that exhibiting a hen too many is equally fatal to success as one too few. We shall confine our remarks to a few of the best specimens at the Hull Meeting.

The cock (a Brown Red) in the Game class for a cock and one hen, was, perhaps, one of the most perfect birds in the Exhibition, and shown in condition, such as we generally find from the yard of Mr. Harry Adams, of Beverley. Being "a stag," no doubt his triumphs will be extended to other shows. The single Game cock class was not equal to anticipation; indeed, it was difficult to find birds worthy of prizes, even the first prize bird (otherwise a model of perfection) was suffering from an old injury to an eye; and the second-prize cock, a Black Red, that last year gained so many premiums for its well-known owner, Mr. Julian, has this year moulted so radically untrue to feather, that his continued success is impossible where anything at all approaching competition arises. In *Hamburgs*, it is only a rare exception that we meet with classes so good as were both the varieties of Spangled. These were one of the most striking features of the Show. An exquisite pen of Brown Red Game Bantams, the property of Mrs. Sharp, well deserved the most favourable mention. Some remarkably good *Polands* were shown.

In *Geese*, *Turkeys*, and all classes of *Ducks*, the Hull Show stood high. The Buenos Ayrean Duck class was not only well filled, but the competition was throughout of the highest order. Mr. Jessop, of the Beverley Road, here held his own against all comers.

The classes for *Pigeons* were not only numerously filled, but also with the choicest specimens. This feature of the Show was, however, robbed of much of its public interest, by all the birds being placed decidedly too high for inspection; but we hear another season this cause of complaint will be remedied.

The introduction into the prize schedule of "selling classes," with prizes, as in other cases, at Hull, proved quite a success. No kind of restriction of age or breed was enforced, the only proviso being a limit as to the selling price—in the fowls to 30s. the pen, and in the Pigeon class to 15s. the pen. A capital competition ensued, with choice the most abundant as to varieties, whilst the limited sums at which they were entered insured change of ownership to not a few pens. Again, the commission on sales to the Society was the same as on all others. The Hull Committee having thus introduced this new feature, no doubt other shows will also carry it into practice successfully.

DORKINGS.—First, W. H. Robson, Louth. Second, J. Dixon, Bradford. Highly Commended, J. Dixon.

SPANGLED.—First, S. Robson, South Milford. Second, T. Greenwood, Dewsbury. Commended, H. Beldon, Bingley; E. Brown, Sheffield; W. Bowly, Cirencester.

COCHIN-CHINA (Cinnamon and Buff).—First, E. Smith, Middleton. Second, T. H. Barker, York. Highly Commended, W. Bradley, Worcester; C. R. D'Eves, Knaresborough.

COCHIN-CHINA (Any other variety).—First, G. Williamson, Nantwich. Second, E. Smith. Highly Commended, W. Dawson, Hopton Mitheld.

GAME (Black-breasted and other Reds).—First, H. Adams, Beverley. Second, Rev. F. Watson, Norfolk. Highly Commended, H. Adams, Beverley. Commended, W. J. Cope, Barnsley; J. Hodgkinson, Salthouse Lane, Hull; M. Mantle, Newark.

GAME (Any other variety).—First, F. Sales, Crowle. Second, W. J. Cope, Barnsley (Duckwing).

HAMBURGERS (Golden-pencilled).—First, J. Dixon, Bradford. Second, S. Smith, Halifax. Highly Commended, H. Pickles, jun., Skipton; Mrs. Jessop, Hull.

HAMBURGERS (Silver-pencilled).—First, H. Beldon, Bingley. Second, J. Platt, Dean. Highly Commended, A. Nicholson, Walkley, Sheffield; W. Cannon, Bradford.

HAMBURGERS (Golden-spangled).—First, J. Newton, Leeds. Second, J. Roe, Manchester. Highly Commended, H. Beldon; H. W. B. Berwick, York; W. Cannon, Bradford; G. Holmes, Driffield.

HAMBURGERS (Silver-spangled).—First, H. Beldon, Bingley. Second, H. Pickles, jun. Highly Commended, W. Cannon; J. Dixon, Bradford; J. Newton, Leeds. Commended, H. Bancroft, Stanington.

POLISH (Any variety).—First and Second, J. Dixon, Bradford. Highly Commended, E. M. Stark, Hull. Commended, H. Beldon, Bingley; D. Hollingworth, Otley.

ANY OTHER DISTINCT OR CROSS BREED.—First, H. Beldon, Bingley. Second, W. Dawson, Hopton Mirfield (Crève Cœur). Highly Commended, E. Greenwood, Burnley (Brahmas). Commended, J. Dixon, Bradford (Black Hamburgs).

BANTAMS (Game).—First, Mrs. Sharp, Bradford. Second, E. Brown, Sheffield. Highly Commended, W. Lawrence, Derby; Mrs. Parren, Hull; C. W. Brierley, Manchester; J. W. Morris, Rochdale. Commended, R. Smith, Hull; J. Dixon, Bradford.

BANTAMS (Gold or Silver-laced).—First, H. Beldon Bingley. Second, J. Dixon, Bradford. Highly Commended, R. M. Stark, Hull (Silver); C. W. Brierley, Manchester.

BANTAMS (Any other variety).—First, W. J. Cope, Barnsley (Pekin). Second, H. Beldon (Black). Commended, R. Gledhill, Bradford (Black).

CANARY AND GOOSE (Any variety).—First, J. Dixon, Bradford. Second, O. A. Young, Driffield. Highly Commended, O. A. Young.

TURKEYS (Any variety).—First, R. M. Stark, Hull. Second, J. Dixon, Bradford. Highly Commended, E. Leech, Rochdale.

DUCKS (Aylesbury).—First, E. Leech, Rochdale. Second, R. M. Stark, Hull. Highly Commended, O. A. Young, Driffield; E. Leech; J. Dixon, Bradford; J. Middlehurst, jun., St. Helena.

DUCKS (Boucon).—First, H. Beldon, Bingley. Second, E. Leech, Rochdale. Highly Commended, E. Leech. Commended, J. Dixon, Bradford.

DUCKS (Black East Indian).—First and Second, J. R. Jessop. Highly Commended, F. W. Earle, Prescott; Master F. Sugden; R. M. Stark, Hull; J. Dixon.

DUCKS (Any other variety).—First, J. Dixon, Bradford (Grey Call). Second, Mrs. Jessop, Hull (Wild). Highly Commended, W. H. Young, Driffield (Muscovy).

GUINEA FOWL (Any variety).—First, O. A. Young, Driffield. Second, R. Voakes, Driffield.

GAME COCK (Any age or colour).—First, H. M. Julian, Beverley. Second, W. Boyce, Beverley. Third, H. Adams, Beverley.

GAME BANTAM COCK (Any age or colour).—First, R. M. Stark, Hull. Second and Third, R. Smith, Hull.

COCK OF ANY OTHER DISTINCT BREED.—First and Third, E. Leech, Rochdale (Brahma and Malay). Second, R. R. Tulp, Monkwearmouth (Spanish).

SELLING CLASS (Any age or variety).—First, O. A. Young, Driffield (Polish). Second, J. Crookes, Sheffield (Silver-spangled Hamburgs). Third, C. Verity, Beverley. Highly Commended, H. M. Julian, Beverley (Game). Commended, H. Beldon.

PIGEONS.

CARRIERS.—First, J. Firth, Dewsbury. Second, S. Robson, South Milford. Highly Commended, Mrs. Statters, Hull; W. Watson, Beverley; H. Yardley, Birmingham; J. W. Edge, Birmingham; C. J. Samuels, Manchester.

ALMOND TUMBLERS.—First, H. Beldon, Bingley. Second, C. N. Lythe, Cottingham. Highly Commended, H. Yardley, Birmingham; J. E. Frist, Hull.

TUMBLERS (Any other variety).—First, H. Yardley, Birmingham. Second, W. Taylor, Sheffield. Highly Commended, J. R. Jessop, Hull (Splashed); J. Bell, Newcastle-on-Tyne (Kites). Commended, B. Leason, Driffield; W. Carlton, Howden.

POWTERS.—First, S. Robson, South Milford. Second, W. Taylor, Sheffield. Highly Commended, H. Beldon, Bingley; H. Yardley, Birmingham; W. Taylor. Commended, H. Brown, Sheffield; J. W. Edge, Birmingham.

JACOBINS.—First, H. Yardley, Birmingham. Second, W. Veitch, jun., Jedburgh, N.B. Highly Commended, T. Ellington, Woodmansey. Commended, J. Percival, Peckham; H. Brown, Sheffield; C. W. Brierley, Manchester; J. W. Edge, Birmingham.

FANTAILS.—First, T. C. Taylor, Middlesborough. Second, J. R. Jessop, Hull. Highly Commended, H. Yardley, Birmingham. Commended, H. Brown, Sheffield; J. W. Edge, Birmingham.

TRUMPETERS.—First, H. Yardley, Birmingham. Second, J. R. Jessop, Hull. Highly Commended, S. Robson, South Milford; W. Veitch, jun., Jedburgh, N.B.; R. Carrick, Preston. Commended, W. Carlton, Howden; J. W. Edge; C. J. Samuels.

BARBS.—First, H. Yardley, Birmingham. Highly Commended, J. J. Stott, Rochdale; J. R. Jessop, Hull; S. Robson, South Milford; H. Yardley; C. J. Samuels, Manchester.

TURBITS.—First, T. C. Taylor, Middlesborough. Second, W. Massey, Wisbeach. Highly Commended, M. E. Jobling, Newcastle-on-Tyne; H. Beldon; J. W. Edge.

OWLS.—First, H. Beldon, Bingley. Second, H. Yardley, Birmingham. Highly Commended, F. Elze, Bayswater; H. Yardley.

NUMS.—First, B. Leason, Driffield. Second, J. W. Edge, Birmingham.

ANY OTHER VARIETY.—First, J. R. Trenan, York (Spots). Second, H. Yardley (Satinettes). Highly Commended, T. D. Green, Saffron Walden (Runts); M. E. Jobling, Newcastle-on-Tyne (Swallows); J. U. Somner, Jedburgh, N.B. (Victorias); J. Wade, Leeds (Runts); C. J. Samuels.

SELLING CLASS (Any variety).—First, J. W. Edge, Birmingham (Swallows). Second, F. Key, Beverley (Trumpeters). Third, W. F. Watson. Highly Commended, W. Massey, Wisbeach; J. Percival, Peckham; J. Bilton, Cottingham. Commended, J. Statters, Hull.

Mr. Edwards, with of Eden Cottage Sparkbrook was the Judge.

THE FOWL

THIS is the first time that the fowl have been shown in Birmingham. I repeat that which we have so often said to exhibitors that your fowls in good time that they may be unpacked and shown by daylight; those who send late, and their name is Legion, throw away one chance of success, and double the labour of the Committee. Accustom the birds that are to be shown together to close contact, see that they agree; it is one thing to run together in a yard and another to be shut up in a small pen. Wash the feet of the birds before they enter the pen. Many

basket, in which even the cock can stand up. Let them have clean straw at the bottom, and feed them before starting with soft food, meal mixed slack, or bread and water or milk.

NORFOLK AND NORWICH ORNITHOLOGICAL SOCIETY.

THE second Exhibition of Canaries, British and foreign birds, poultry, Pigeons, &c., in connection with the above Society, was held at the New Corn Hall, Norwich, on the 3rd, 4th, and 5th inst. The following are the awards:—

CANARIES.

NORWICH (Clear Yellow).—First and Second, S. Waters, Ipswich. **NORWICH (Clear Buff).**—First, S. Waters. Second, T. Mansfield, Norwich.

NORWICH (Marked or Variegated Yellow).—First, S. Waters. Second, J. Webster, Norwich.

NORWICH (Marked or Variegated Buff).—First, D. Gries, Norwich. Second, G. Reeve, Norwich.

NORWICH (Clear Yellow or Marked Crested).—First, H. Sexton, Norwich. Second, W. Adkin, Norwich.

NORWICH (Clear Mealy Crested).—First, H. Sexton. Second, J. Haydn, Norwich.

CINNAMON (Yellow).—Prize, G. Collinson, Yarmouth.

CINNAMON (Mealy).—First, T. Irons, Northampton. Second, C. Betts, Norwich.

YARMOUTH (Clear Yellow).—First, G. Collinson. Second, S. Stafford, Great Yarmouth.

YARMOUTH (Clear Buff).—First, S. Stafford. Second, G. Collinson.

YARMOUTH (Marked Yellow).—First, S. Stafford. Second, G. Collinson.

YARMOUTH (Marked or Variegated Buff).—First and Second, J. Cox, Great Yarmouth.

BELGIAN (Clear Yellow).—First, G. Harding, Ashton-under-Lyne. Second, G. Goodwin, Derby.

BELGIAN (Clear Buff).—First and Second, G. Hardy.

BELGIAN (Marked or Variegated Yellow).—First, O. Nicholson, Fareham. Second, G. Goodwin.

BELGIAN (Marked or Variegated Buff).—First and Second, G. Goodwin.

CLEAR YELLOW OR MARKED CRESTED.—Prize, G. Harding.

CLEAR MEALY OR MARKED CRESTED.—First and Second, G. Harding.

LIZARD (Silver-spangled).—First, — Phillips, Nottingham. Second, — Waller.

LIZARD (Golden-spangled).—First, — Waller. Second, G. Goodwin.

CAGES OF SIX (Open).—First, T. Madge, Norwich. Second, T. Mansfield, Norwich. Third, J. Webster.

GOLDFINCH MULE (Mealy).—First, S. Waters. Second, W. Lincoln, Norwich.

GOLDFINCH MULE (Jonque).—First and Second, S. Waters.

LINNET MULE (Mealy).—Prize, J. Lingard, Ashton-under-Lyne.

ANY OTHER VARIETY OF MULES.—Prize, Dr. Guy, Norwich.

BRITISH BIRDS.—Bulfinches.—Prize, J. Knibb, Northampton. *Chaffinches.*—Prize, J. Sayer, Norwich. *Goldfinches.*—Prize, H. Howlett, Norwich. *Linnets.*—Prize, S. Green, Norwich. *Starlings.*—Prize, S. Waters. *Blackbirds.*—Prize, J. Sayer, Norwich. *Song Sparrows.*—Prize, J. Sayer. *Starlings.*—Prize, J. Sayer. *Magpies.*—Prize, J. Sayer. *Any other variety.*—Prize, J. Sayer. *Black Chaffinches.*—Prize, J. Sayer. *Nightingales.*—Prize, J. Rose, Norwich. *Sticks or Abdercrombie.*—Prize, S. Waters, Ipswich.

FOREIGN BIRDS.—Parrots (Grey).—Prize, J. Sayer. *Parrots (Green).*—Prize, J. Rose. *Parrots (Australian Grass).*—Prize, J. Rose. *Parrots (Ring-necked).*—Prize, Capt. Warner, Marsham. *Any other variety.*—Prize, J. Rose, Norwich (Quaker). *Roskill Parrots.*—Prize, Capt. Warner, Marsham. *Pennant's Parrots.*—Prize, Capt. Warner. *Cockatoos (Sulphur or Lemon-crested).*—Prize, J. Calver, Norwich. *Cockatoos (Black or Any other variety).*—Prize, R. Mackley, Norwich. *Jane Sparrows.*—Prize, C. Betts, Norwich. *Zebra Wax Bills.*—Prize, J. Rose. *Wax Bills (Any other variety).*—Prize, S. Waters. *Any other variety of Foreign Birds.*—Prize, Mrs. Steward, Great Yarmouth.

POULTRY.

SPANISH (Black).—Prize, T. Looms, Norwich. (Not so good a class as might have been.)

DORKING.—First, J. Monsey, Norwich. Second, J. Frost, Norwich. Highly Commended, J. Lingard, Ashton-under-Lyne; J. Smith. (Capital class; superior birds.)

DORKING (White).—First, Rev. F. Hodson, Bridgewater. Second, J. Lingard.

COCHIN-CHINA (Cinnamon or Buff).—First, Rev. C. Spencer, Ash-borough. Second, Rev. C. Gilbert, Yarmouth. Highly Commended, Mrs. Dawson, Norwich; Rev. C. Spencer. (Good class.)

COCHIN-CHINA (Brown or Partridge-feathered).—First, Rev. F. Hodson. Second, J. Wright, Woodbridge. (Good class.)

COCHIN-CHINA (White).—First, H. Bagge, Stoke Ferry. Second, Col. Cockburn, Norwich. Highly Commended, Col. Cockburn.

GAME (White and Pile).—First, J. Monsey, Norwich. Second, S. Matthews, Norwich. Highly Commended, T. Parry; T. Rix. (Good class.)

GAME (Black-breasted Reds).—First, J. R. Kersey, Winston. Second, T. Rix. Highly Commended, Capt. Bignold, Norwich; W. Downing, Suffolk; J. Monsey, Norwich. (Some superior birds among them.)

GAME (Duckwings and other Greys and Blues).—First, S. Matthews, Norwich. Second, J. Monsey, Norwich. Highly Commended, W. Parry, Derby.

HAMBURGH (Golden-pencilled).—Prize, Rev. T. L. Fellowes, Beighton Rectory.

HAMBURGH (Silver-pencilled).—First, J. Monsey, Norwich. Second, Rev. T. L. Fellowes, Beighton Rectory.

OLDLAND (Black, with White Crests).—Prize, R. Stark, Hull.

OLDLAND (Gold).—First, W. H. Hild. Second, J. Wright, Woodbridge.

ANY OTHER VARIETY.—Prize, — Wright, Woodbridge.

ANY OTHER DISTINCT BREEDS.—First, J. Monsey, Norwich (Malay). Second, J. Wright, Woodbridge (Brahma Pootra). Highly Commended, E. Bagge, Stoke Ferry (Andalusian); S. Waters, Ipswich (Crève Cœur). Commended, Rev. T. L. Fellowes; W. Pares, Derby. (Some very superior birds shown in this class.)

BANTAMS (Gold-laced).—First, Rev. F. Hodson, Bridgewater. Second, J. Monsey, Norwich. Highly Commended, R. Stark, Hull. (Very good class.)

BANTAMS (White, with Clean Legs).—First, J. Monsey, Norwich. Second, R. Stark, Hull.

BANTAMS (Black, with Clean Legs).—First, J. Monsey, Norwich. Second, Rev. F. Hodson, Bridgewater. Commended, Rev. F. Hodson. (Very good class.)

GAME BANTAMS (Black or Brown-breasted Reds).—First, J. Monsey, Norwich. Second, J. Wigg, Woodbridge. Highly Commended, J. Wigg; S. Waters. (Some extraordinarily good birds; Mr. Monsey's the best we ever saw.)

BANTAMS (Duckwing).—First, G. Collinson, Yarmouth. Second, S. Waters, Ipswich. Highly Commended, J. Monsey, Norwich. Commended, G. Collinson, Yarmouth. (Good class.)

BANTAMS (Any variety).—First, O. Nicholson, Fareham, Hants. Second, A. G. Cane, Southwell, Notts. Highly Commended, J. Whaites, Norwich.

PIGEONS.

CROPPERS.—First, J. Whaites, Norwich. Second, R. Mackley, Norwich. Highly Commended, W. Reynolds, Yarmouth.

HEMS OF ANY COLOUR.—First, W. Raby, Norwich. Second, J. Whaites, Norwich.

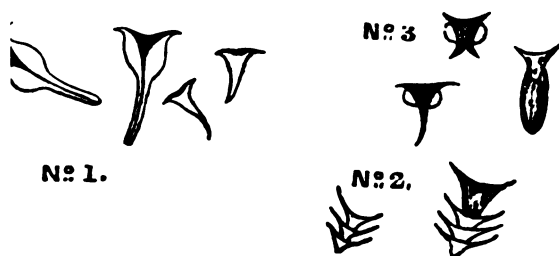
CARRIERS (Black and Dun).—Prize, J. Whaites, Norwich.

ALMOND TUMBLERS.—First, S. H. Meachen, Norwich. Second, — Summers. Highly Commended, S. H. Meachen; W. Simmons, Yarmouth.

ANY VARIETY NOT BEFORE MENTIONED.—First, Mrs. Craigie, Chigwell White Barbe. Second, J. Monsey, Norwich (Isabels). Highly Commended, Mrs. Craigie (Kunts); J. Chase, Yarmouth (Black Priests). (Pigeons not so good as might have been.)

JUDGES.—Canaries: Messrs. W. Copeman, J. Nichols, and Breeze. British and Foreign Birds: Mr. Robert Thorns. Poultry and Pigeons: Mr. J. Martin, Linton Park, Staplehurst, Kent; and Mr. N. Sykes, jun., Globe Road, London.

MICROSCOPIC EXAMINATION OF FOUL BROOD.



THE above rough sketches are the result of an investigation into a disease named by apiarians "foul brood," which foul brood is the dying of some of the larvae or young bees in the cells before the covering of the cells is ruptured or eaten by the young bees. The decomposed young brood forms a brown sticky or treacly mass, and this when carefully examined with a drop of distilled water under a very high power, a one-eighth or one-sixteenth, gives the above, the size of which is about one-twenty-four-thousandth to one-twenty-five-thousandth of an inch in the transverse diameter.

No. 1 are sketches of the animals as seen alive. The dark angular centre of the larger figures appear to me to be ades thrown by the singularity of their bodies; but being minute and their gradually shifting their position makes very difficult to determine with certainty. The nest of the animals is semi-transparent, their movements a slight undulatory lateral motion.

In Nos. 2 and 3 the animals were dead. They were found in my kindly furnished by Mr. Woodbury for examination. He informed me he had been heated, which in all probability destroyed the life of the animals. They seem to have shrunk up, and most of them had lost their limbs and appeared like the upper figure and opaque, or early so, except the two wing-like processes on the side.

The No. 2 are very curious, and suggest the idea of an ellipse figure of the Hose-in-hose Polyanthus, or some of the Sertulariæ amongst the Corallines. Can this be its mode of propagation? It certainly appears very like it, and so is apparently carrying out the great mode of propagation by fission like most, if not all, of the lower forms of animal life.

The affinity of these animals to others, or their place in nature, I must leave for future study; for, being creatures so minute, it is very difficult to assign to them their position amongst the multitudinous forms of microscopic animal life.—EDWARD PARFITT, *Devon and Exeter Institution*.

DRIVING BEES.

So many inquiries reach me from correspondents who have failed in driving and uniting bees, that I deem it worth while to enter upon the subject at some length, and fully to describe what I have found the best mode of effecting the desired object.

Let no successful operator deride or underrate the difficulties which often beset the novice in his first attempts at driving bees. I say often, but not always—in some few instances success is attained at once, as it were by a fortunate inspiration, and one successful operation generally begets so much confidence that all subsequent difficulties are readily overcome. Such was, I believe, the case with that accomplished apiarian "B. & W." when under the *nom de plume* of "A COUNTRY CURATE" he first delighted myself, in common with the other readers of the earlier volumes of the then COTTAGE GARDENER, by the interesting and graphic details of his earlier experiences contained in the "History of an Apiary." With myself, however, the case was far different, and it was only after many ineffectual attempts that I at length succeeded so recently as the summer of 1859 in first driving a stock of bees. Since that time my practice in this way has been very extensive, and as experience has led me slightly to modify my original proceedings, I am not without hope that by giving full details I may succeed in smoothing the path of some who may be desirous of mastering the art of driving, whilst they have no apiarian friend who is competent to instruct them by his example, which in this case especially is better, far better, than precept.

Driving bees should always be performed in the daytime, and the beginner had better wear a bee-dress and stout gloves;* but the only absolutely essential implements are a couple of empty hives (one of which should be of the same diameter as the hive to be operated on), an empty bucket, a long piece of stout linen (a roller-towel with the seam ripped answers admirably), a sufficient length of large twine, and a lighted fumigator or cigar, or some smouldering linen rags.

The bucket having been so placed as to stand firmly on the ground about a yard from the stock to be operated upon, a little smoke should be blown into the entrance. As soon as the bees retire the hive must be slightly raised from its floor-board and a few whiffs of smoke blown under it. Then raise the hive altogether from its place and steadily invert it on the bucket, covering it immediately with an empty hive of the same size, and closing the junction of the two by first winding the cloth round them, and then securing it by four turns of string, taking two turns round the upper and two round the lower hive. The bees within being thus safely ensconced, the second empty hive may be placed on the floor-board to amuse those returning from the fields, and the united hives with the bucket conveyed to a shady spot at a little distance. Here it will be found very convenient to have a couple of kitchen chairs, upon one of which the hives and bucket may be placed, whilst the operator seats himself on the other, and then a smart and regular rapping of the full hive with the palms of the hands should take place. In about ten minutes the great majority of the bees will generally be so alarmed as to quit their own hive and take refuge in the empty one—a fact which may be ascertained by listening to the noise made by them in ascending. At the expiration of the above-named period the cloth may be removed, and the hives sufficiently separated by raising one side of the upper one to admit of inspecting the interior. Few bees will be disposed to escape, and very rarely will they commence an attack. If nearly all have ascended into the hitherto empty hive, it may at once take the place of the decoy hive on the floor-board, and the full one may be

* A wide-mouthed bag of coarse black net, sufficiently large and long to envelope the head with a hat on, and reaching well below the neck, where it is secured by the coat buttoned over it, forms a very simple and efficient bee-dress. The best protection for the hands is a pair of Indian rubber gloves, such as are used by photographers.

conveyed in-doors, where the combs should be cut out, and the few remaining bees brushed off with a feather and returned to the apiary. If, on the other hand, many bees still adhere to their original domicile, or if, as is sometimes the case, only a few stragglers are found to have quitted it, the one side of the upper hive should be upraised a few inches and kept steadily in that position with the left hand so as to permit an unobstructed view of the interior, whilst the lower hive is rapped smartly with the right. Believing, as I do, that the jarring of the comb is the principal cause which impels the bees to ascend, I disregard the dictum of authority, and always rap on one side of the hive which is opposite to the sides of the combs, endeavouring so to regulate the force of my blows that whilst the vibration of the combs is so great that a bee can scarcely keep its footing on them, the concussion shall not be sufficient to detach them from their foundations. Such energetic measures admit of little delay on the part of the poor bees, a cry analogous to that of "*Sauve qui peut!*" speedily arises among them, as with vibrating wings and uplifted tails they "skedaddle" into the cheerless and ungenial shelter of an empty hive.

During this rush upwards, it is well to moderate the violent rapping into gentle tapping, just sufficient to keep the bees moving. If, as will probably be the case, the first exodus should not be sufficiently general, recourse must again be had to vehement rapping, and in this way a succession of panics may be produced until scarcely a bee remains in the hive. Should it be desired to catch and remove the queen, she may usually be found and secured by watching for her during the ascent. If she escape this scrutiny the congregated bees may afterwards be dashed out of the hive on a linen cloth spread on the ground, and compelled to run a short distance over the cloth to the empty hive, one side of which should be raised on a block an inch thick to allow them to enter freely. During this operation the queen may usually be found and secured; if not, it must be repeated until the desired end be attained. As bees will frequently refuse to remain in an empty hive when deprived of their queen, it is advisable to confine her in a small box made of perforated zinc, which may be firmly fastened to the top of the hive inside by means of a packing-needle and twine.

This is my mode of proceeding with ordinary straw hives, and it is on these that I should advise the novice to make his first experiments, selecting only strong stocks and well-filled hives. When he has been completely successful, and has attained sufficient confidence in his own powers, he may try his hand with wooden hives. In operating on these the cloth, string, and bucket may generally be dispensed with, but owing to the solidity of their material the vibration is so much less that bees do not so readily ascend, and a little more skill and patience are required.

In a future paper I hope to comply with the request of such of my correspondents as have desired information as to what modes of uniting bees have been proved the safest and most effectual by—A DEVONSHIRE BEE-KEEPER.

FOUL BROOD AND LIGURIAN BEES.

In reply to "INQUIRER," I beg to state that foul brood has nothing whatever to do with the introduction of Ligurian bees. No foreign bees have ever been located within fifty miles of my apiary, which is composed of the common black bees, and yet one of my hives has this season fallen a victim to the disease. From whatever cause it arises, whether from chill or something unknown which occasions an epidemic, every practical bee-keeper must feel deeply indebted to Mr. Woodbury for bringing foul brood under the notice of the public.

It exists in many localities where it was never suspected, and but for attention having been directed to the subject the writer can prove demonstrably that he would have lost a straw hive containing enough of honey to carry a medium swarm over two winters. Bees, in the case of foul brood, do not remove abortive brood in all stages. They remove chilled brood, but not invariably.

Look into any old hive, and you will scarcely miss seeing some of the above-mentioned ailments that have been

sealed up for ages. But let the cause be philosophically and candidly inquired into. I for one am grateful to Mr. Woodbury for the timely warning, which may probably lead to the preservation of a hive that would otherwise have inevitably perished.—AN ON-LOOKER.

MELILOTUS LEUCANTHA AND BEE FLOWERS.

HAVING for several seasons sowed some rows of *Melilotus leucantha* alongside my accustomed supply of borage, I am in a position to reply to the inquiry of Mr. W. C. Ellis, at page 384. I found the bees showed such a decided preference to the borage, to the almost total neglect of the *melilotus*, that for some years I have discontinued sowing it. It is a rank-growing plant, and its value as a bee-flower I quite agree with your correspondent is much over-estimated in some works. Borage, on the contrary, is eagerly sought after by the bees, and fed on even on wet days, should it be in close proximity to the apiary, the pendulous umbrella-shaped flowers affording shelter. Borage, a succession, nig-nonette, and a few beds of nemophila, are all the garden provision I am accustomed to make, besides, of course, an abundant supply of spring flowers—crocuses, hepaticas (single), and arabis. Bee-keepers would reap a much greater benefit by presenting the farmers in their neighbourhood with a few pounds of white clover per acre to sow as they lay down their pastures (should the land be at all favourable for its growth and they so neglectful of their interests as to omit doing so), than occupy much space with what are usually styled bee-flowers.—A KENFRESHIRE BEE-KEEPER.

OUR LETTER BOX.

SPANISH COCK'S COMB FALLING OVER (R. L. W.).—The comb may begin to fall from several causes. If the bird is from a strain with large fleshy, thick combs, they are carried over at the end by their own weight as soon as the birds attain a certain age and growth. In some cases the change from hard to luxurious living will cause undue development and a falling-over. In others it is part of the breed, and such combs are distinguishable by an indentation or hollow in front known as the thumb mark. Such never breed prize birds. As you say the comb was perfectly straight when you bought him it is probable it may return, if the change arises from the first cause; it is almost certain it will if it springs from the second. There is no hope from the third. Your Cochins inherit a crooked back; their ancestors were so before them. Nothing is so certainly transmitted as a crooked back. Either the cock or the hen requires to be changed. Perhaps both require to be got rid of.

COCHIN-CHINA BLIND (Regular Subscriber).—We are disposed to think, as you say the eye is perfectly clear, the blindness is only partial or temporary. We should advise purging with castor oil, a tablespoonful every other day. If that failed we would bleed at the back of the comb.

TOPKNOT OF BLACK POLANDS (G. W. F. P.).—It is a disadvantage, almost a disqualification, if a white topknot have black feathers intermixed with it. No topknot is free from some black in front, at least we never saw one, and it is bad policy to cut or trim it. But there should be no coloured feathers save in the front.

BEAK OF RED GAME COCK (Idem).—A yellow beak is not the necessary occupation to yellow legs, although uniformity is always pleasing.

POINTS IN COCHIN-CHINA FOWLS (Regular Subscriber).—Our space will not permit us to give all the points, or a detailed account of Cochins cocks and hens. We will give the principal points, but for detail consult one of the many books on the subject. Round, sharp, intelligent heads; perfectly upright and straight combs with many serratures; as little mixture of colour in the plumage as possible; well-feathered legs; small tail in the cock of curly feathers, in the hen of round feathers; large plaff; yellow legs. Any fault in the comb a disqualification.

SQUIRREL (W. Williamson).—Squirrels are in confinement mostly fed on any kind of nuts, sopped bread and milk, and most kinds of corn. To tame it let the cage be placed low where persons are constantly moving about, and tempt it by kindness and feeding from the hand. We know of no manual on Squirrel-keeping.—B. F. B.

RABBITS FOR EXHIBITION (R. J.).—We have known prizes for weight awarded to Rabbits ten months old, weighing from 9 lbs. to 12 lbs. A Rabbit at three months old having ears 17½ inches long we consider very likely to be a prizetaker, for they ought to be 21 inches long by the time the Rabbit is ten months old.

LONDON MARKETS.—NOVEMBER 23.

POULTRY.

We have still a good supply of all poultry, and a very moderate trade. Grouse and Partridges are scarce, Pheasants and Hares plentiful.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	0	3	6	Partridges	1	9	2	0
Smaller do.	3	0	3	3	Grouse	2	6	2	0
Chickens	6	2	1	9	Hares	2	0	2	3
Geese	1	2	6	0	Rabbits	1	4	1	8
Ducks	1	2	3	3	Wild do.	0	8	0	0
						0	8	0	0

WEEKLY CALENDAR.

Day of M th Week.	Day of Week.	DECEMBER 1-7, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
1	Tu	December moth.	46.4	35.2	41.8	17	45 af 7	53 af 3	6 10	26 11	20	m. s.	335
2	W	Winter Tortrix moth.	47.3	34.0	40.7	16	47 7	52 3	11 11	45 11	21	10 29	336
3	Th	Pin-tailed Duck comes.	46.9	36.1	41.0	19	48 7	52 3	morn.	5 0	6	10 5	337
4	F	Furze flowers.	47.5	35.6	41.6	16	50 7	51 3	16 0	26 0	23	9 41	338
5	S	Caspar Bauhin died, 1624. Bot.	48.2	34.2	41.2	21	51 7	51 3	22 1	45 0	24	9 17	339
6	Sun	2 SUNDAY IN ADVENT.	47.4	35.9	41.6	21	52 7	50 3	31 2	8 1	25	8 51	340
7	M	Polyanthus flowers again.	47.8	35.9	41.9	19	53 7	50 3	42 3	35 1	26	8 26	341

From observations taken near London during the last thirty-six years, the average day temperature of the week is 47.6°, and its night temperature 35.1°. The greatest heat was 62°, on the 1st, 1857; and the lowest cold, 14°, on the 5th and 6th, 1844. The greatest fall of rain was 0.52 inch.

GARDEN GHOSTS.



WHEN I was in London some weeks ago everybody was talking about the Ghost, and "The Ghost" was upon every bare wall, scaffolding-board, and omnibus. As you went out of Euston Station, at both windows of your cab appeared a Ghost. Your paper was full of Ghosts; and a great heading, "Visit of the Ghosts to the Lord Chancellor," was followed by an account of their visit, and how they

behaved, and what his learned Lordship said; but to none of them would he grant the patent—in fact they were only scientific Ghosts, or would-be patent Ghosts.

Now I possess a real Ghost. This is the Ghost of a lady—a very wicked lady, who used to do very wicked things. The front terrace-walk of our house is sometimes called "The Ghost's Walk." I have seen her twice—once while seated at luncheon at one o'clock in the day, and once at night, when I took her for one of the maid servants, and desired her to take some hot water to my room. Several people have also seen her; but I am very anxious to see her again, to ask her a question or two regarding some treasures she knows all about.

"Near the Cell there is a well,
Near the well there is a tree,
Under the tree the treasure be."

So it is said in old verses referring to this house and my Ghost. One peculiarity about my Ghost is that she is only seen about once in four or five years, and then only by those who have eyes capable of seeing more than other people, or who from disposition, temperament, or inclination are on the look-out for something uncommon and novel. My Ghost's name when she was in the flesh was Lady Ferrers, and out of compliment to her I have named a white variegated Geranium of mine "The White Lady." My "White Lady" has scarlet flowers; but I have hopes among my seedlings of finding a good strong-growing variegated one with Madame Vaucher flowers, which I shall call "The Ghost."

But setting aside patent Ghosts, do you not agree with me that this capacity which some people have and some have not, or which they have not at all times, of seeing Ghosts, explains in some degree the sentimental opinions, the theoretical fancies, or, as the owners call them, practical opinions concerning ancient and modern gardening—may not these diverse notions about ancient and modern flower-gardening, herbaceous *versus* bedding plants, be explained by the fact that some of us see Ghosts under certain conditions or circumstances—at all events are on the look-out for them? No doubt my reverend brother in Wiltshire was looking out for a Ghost when he raised "with outstretched walking-cane some little border flower

nestling in its leafy bed." That was keeping the Ghost at a distance at all events. Fancy our florists at a Horticultural Committee meeting turning up a flower with an outstretched walking-cane!

We all of us at times have a Ghost-seeing humour, and that, no doubt, accounts for the change of opinion which comes over us near the beginning of autumn about some of the new bedding plants. There is, for instance, the *Coleus Verschaffelti*. When I saw it in July at the Crystal Palace Mr. Gordon and myself both set it down as a failure, but in September it was quite a different thing. The Ghost had been at it, or I was in a Ghost-seeing humour, for I liked it amazingly, and made up my mind to follow Mr. Earley's advice about it next season. Perhaps after a few years' acclimatising it may become as easy to manage as a variegated Geranium. The same may be said of the *Amaranthus melancholicus* ruber. When I recommended, in the description of the bedding-out at the Crystal Palace, a certain careful treatment of it, I had seen so many failures even by first-rate gardeners, that I was induced to mention Mr. Veitch's mode of managing it. But "W. M. A.'s" account, at page 151, of his easy success makes it at once everybody's plant. Mine, though tolerable in the first part of the summer, became very shabby latterly, the slugs making terrible havoc among its leaves.

In certain quarters there has been as much sensation created by a plant as by the Ghosts. A contemporary gardening periodical recommended the Golden Balm as an edging, in such glowing language, that it was to beat even the Golden Chain, and remain as a permanent ornament; but the writer forgot that plants, like departed ladies and gentlemen, have sometimes a Ghost-like tendency. A certain purchaser, on the strength of the suggestion, bought some plants of a London florist, and golden and beautiful they were when he bought them. But one rather wet day he went to look for his golden beauties—vanished. "Why, they are all green now!" Off he started for the vendor's, and, as I was informed, used by no means Ghost-like language there.

Now that Ghost-caught customer of the said florist leads me to express surprise that no one as yet has seconded your editorial proposal to have an exhibition of bedding plants in 1864. From what I have witnessed this year, the variety of opinions on the merits of plants and the changes of opinion which experience brings about (the *Coleus Verschaffelti* is a case in point, as well as the Golden Balm), an exhibition of bedding plants is as desirable for the nurserymen as for the public. For myself, I hereby record my conviction as an amateur, that such firms as Messrs. Carter, Henderson, Williams, Lee, Veitch, &c., never have and never will recommend anything which they do not believe to be what they describe it; and if I knew nothing about bedding plants, I could go with the utmost confidence to any one of those firms, and I am quite sure they would supply conscientiously what they considered best adapted to my wants: and therefore for any one to suspect our first-class nurserymen of unfair or dishonest attempts to

delude purchasers, is acting like silly timid people, who are afraid of going out after dark for fear of the Ghosts. Still there remains the simple fact that there are silly people in the world, that they constantly suspect the Ghost is near, and that some unknown evil is working against them—in other words, people will suspect nurserymen are too anxious to make money of their plants to care whether their customers are taken in or not; and this fact alone is sufficient proof that an exhibition of bedding plants is most desirable. We do not want more than one or two exhibitions in the course of the season; and these, necessarily, to make them satisfactory, cannot be held till quite the end of June or beginning of July, when the plants to be exhibited have been fully exposed to the air for at least one month, so that their qualifications for bedding-out may be thoroughly tested by open-air exposure. They may be planted in boxes or pots; but the grand test will consist in the constant exposure to all the vicissitudes of the open air for at least four weeks—longer if possible.

I allude to this now, and bring forward the Golden Balm customer as a strong case in point to prove the advantage and protection which an exhibition of bedding plants would be, though I have heard quite as unghostlike language used against other firms, in the hope that during the next few months something may be done to arrange satisfactorily the mode, conditions, and time, for a grand exhibition of bedding plants.

We have lost our leading authority on almost all subjects of open-air gardening, and deeply grieved am I for one. Though personally unknown to me, the late Mr. Beaton's writings have been of the greatest use in diffusing real practical knowledge, provoking inquiry and experiment, and in promoting a higher and purer taste in all that relates to the flower garden. It is impossible, also, to read his articles without being struck with the hearty spirit in which they are written, as if he was in love with the subject, and was only anxious that you should likewise understand and enjoy it just as much as himself. Among nurserymen I believe there is but one universal feeling of regret for his loss, and of grateful remembrance of the benefits he conferred upon gardening. For myself I shall be very glad to contribute towards a monument to be erected as a memorial of him.

But to resume. Your pages are open to judicious suggestions on all subjects connected with horticulture, and I look forward to reading many pleasant articles on open-air flower-gardening even during the frost and snow. May I be allowed, therefore, to express a hope that such firms as I have already alluded to may be induced to offer any suggestions they may think advantageous to make an exhibition of bedding plants really useful to the public as well as the trade? A few attempts have been made even this year. Mr. Holland showed some new colours in Geraniums, and Messrs. Henderson their lovely variegated seedlings; but no encouragement has been given in the form of prizes, still less were the circumstances under which they were grown mentioned—and without the open-air test the public cannot expect to be satisfied of their suitability for open-air flower-beds.

The only real exhibition, looking at it as a test of suitability, has been afforded by the various public gardens, such as the Royal Horticultural Society's at Kensington, but more especially the Crystal Palace, Victoria Park, and perhaps Kew. The Horticultural Gardens are too near the London smoke to be of use as an experimental garden for flowers; but at the Crystal Palace they generally make use of the round beds between the Rhododendron-beds at each end of the grand terrace for that purpose. These beds make capital exhibition tables, for there the plants are right before the eyes of all the public, and, whether the public are Ghost-seeing eyes or not, there are the plants.

Well, well! we have heard all about the Coleus and the amaranthus, but what about the two Centaureas? As a bedding plant I do not care for the gymnocarpa, but the candidissima is a love; the Coleus being next to it, and the Cloth of Gold round all. This candidissima strikes with me just as much as the Cineraria maritima. Do not coddle it too much, and do not be in too great a hurry to get it to root makes a magnificent dinner-table plant, or for a flower bed.

like silver. And then the Cloth of Gold. Difficult to get up a stock of it? It does not grow fast, certainly—all the better for an edging; but it will grow fast enough if you give it plenty of rich food. If you want a variegated Geranium as a low edging, give it only plain soil; but if you want it to grow rampant and strong it can feed and fatten on the richest; but do not give rich food to plain-leaved Geraniums, or you will find them run all to leaf. Then there was, if you remember, Magenta No. 2 (Beaton's), the flower twice the size of No. 1, and such a colour! But there is another coming out to beat even No. 2. My choice, however, of the new beauties exhibited at the Crystal Palace this last season falls on Mrs. Whitty (Beaton's), and Lucien Tisserand. Mrs. Whitty is a lovely pink, and as exhibited at Sydenham in that soil decidedly superior to Christine. The foliage is something like the Hybrid Perpetual Geranium Sidonia; the flower the same colour as Christine, but more stellate; and seed-pods did not appear to disfigure it, as is the case with Christine. The Geranium which took my fancy the most was Lucien Tisserand. It was exhibited in the first round bed at the east end of the grand terrace, and formed an edging to it. It is of the Horse-shoe race, a lovely orange scarlet, the flower round enough to satisfy a florist, and in the Sydenham soil, very dwarf and an abundant bloomer.

It would be a good move on the part of the authorities at the Palace, if they were to offer to place a portion of their ground at the service of the public as an Experimental Garden. Say I want to test a seedling Geranium; as soon as I have stock enough for a bed, let it be in my power to bespeak that bed, leaving it when planted to be managed by the gardeners there. This would be an open-air test at once sufficient to satisfy the trade and the public too. This is, in fact, what the late Mr. Beaton did. Nearly all his seedlings were tested at the Crystal Palace or at Kensington. His seedlings, Crimson Minimum, a charming dwarf Nosegay, of rich deep rose colour, not half enough known; Lord Palmerston, Magenta No. 2, and Mrs. Whitty were all brought out in that way, and not served out to the public till thus tested.

And, now, if any of your readers happen to be in London, with nothing particular to do for an hour or two, and it is a dull foggy day, let them pay a visit to Messrs. Henderson's nursery at the Wellington Road, and ask to be shown the two span-roofed houses containing the variegated Geraniums, and they will see such a sight as will make them forget November, and frost, and snow, and fog. Talk about flowers and florists, why the leaves and leafists will run a neck-and-neck race with them before long. We leafists can produce gold, silver, scarlet, crimson, pink, and magenta all shaded off into each other, or drawn in distinct lines in such lovely combinations as would make poor old Miller beside himself if he appeared again, either under my auspices or Mr. Pepper's, as a Ghost.—F. W. ADEY, *The Cell*.

TRITOMAS.

WHILE the great majority of herbaceous plants, that at one time were extensively grown, have gradually disappeared to make room for the plants considered more suitable for the system of flower gardening which now exists, there are, on the other hand, a very few which the massing and lining of colours have increased in use a thousandfold. Whether this be good or bad taste it is no part of my present purpose to discuss. It will, however, be a happy day for many a hard-driven gardener when a much greater proportion of bedding plants shall consist of such as will be quite hardy or nearly so. Already a gentle tide has set in in this direction, and it is to be hoped that it will swell and gather both strength and beauty till many more really beautiful additions have been made to the present limited show of hardy plants that are available for the parterre. Among the many variegated and other plants recently introduced from Japan there may, perhaps, be a few which some day may be pressed into our service for this purpose.

Tritomas—some of the varieties at least—are among the few hardy plants of this description which have been, and are still, entering into almost every garden with great rapidity. The plants which become favourites are

they are being called and popularised by such names as "Red-hot-pokers," "Volunteers," &c., by those who do not care nor try to remember the frightful names by which gardeners know them. With what sort of a name the "Johnny Bottle" style of man, I will not say gardener, may dignify them it would be hard to divine; although I should not be surprised to hear that it is "Tree-Tuoamers." It seems, however, possible to be "a very good gardener," and at the same time be "grievously ignorant" of I's and my's. There is about Tritomas, particularly to a person who sees them for the first time, something very striking and beautiful when densely marshalled in long straight lines. In this manner they are somewhat extensively grown here as back lines to flower-borders, more especially Tritoma uvaria glaucescens and T. Rooperi. On a line of the former variety, 140 feet long, I counted one day last autumn 857 blooms; and if anything in the form of a line of flowering plants deserves to be described as gorgeous this certainly did, and this variety cannot be too strongly recommended for the purpose.

T. Rooperi is a variety not so well known as it deserves to be, it being of no less merit than T. uvaria from the fact that it is equally beautiful, and has the great merit of commencing to bloom when T. uvaria is past. It continues in flower here nearly the whole winter. While I write (November 18th) it is splendid, and last winter it flowered through frost and snow. It is a much stronger grower than any of the others, and throws up its enormous spikes of flower to the height of 6 and sometimes 7 feet, and sometimes there are smaller heads of bloom lower down from the same main stems. By planting these two varieties alternately in the rows a display of Tritomas can be had for five months in succession.

I should like much to see a long line of T. Rooperi and Gynierium argenteum planted time about, and think the effect would be very striking at this dull season, when outdoor flowers are so scarce. The somewhat stiff and marshal-looking style of the Tritoma with its orange and scarlet flowers would help to heighten the effect of the beautiful plumes of white, drab, grey, and purple of the Gynierium. They would both thrive well in the same soil, as they like good feeding and a good exposure.

It has been affirmed that T. uvaria perpetuates itself true from seed, but such has not been my experience of it. A few years ago I sowed a quantity of seed, and have flowered a great many plants in two long back lines, each 160 feet long, and there are scarcely two plants alike. They differ in habit, and more especially in colour, there being all shades from a pale yellow to a bright scarlet; but very few of them are of equal merit with the original, while only one is considered an improvement on it from its coming into bloom a fortnight earlier, remaining longer in bloom, and having a larger spike of a brighter colour.

Propagation is easily effected by division of the roots, and where numbers are more the object than a few plants that will bloom the following autumn, every eye on the roots will make a plant; but when the object is to obtain a more limited number of plants that will flower in a short time, the plan is to lift the old stools and divide them with as much root to each plant as possible. Where room can be afforded them the best way is to divide in autumn as soon as done flowering, and pot each plant singly into six-inch pots and winter them in a cold pit or frame. In the following April they will have rooted nicely, and should then be planted out in rich deeply-trenched soil, and in autumn each plant will yield one or more blooms according to its strength, and they will form fine flowering stools for the following season. When this cannot be done it is a good way to divide in April and plant where they are to bloom. They are very fond of leaf mould well decayed, and the ground should be well enriched with it. They bloom best if allowed to remain undisturbed for some years, and when they become too thick in the rows they can be thinned out. Of course in time they become immense stools, and unless a border can be devoted to them as immense specimens, lifting and replanting or reducing becomes a matter of necessity to keep them within bounds.

In most localities it is necessary to protect them from severe frosts by putting a little mould or a few half-decayed leaves round their collars the same as is practised with

Globe Artichokes. In our light soil here we draw some of the soil round them with a spade or hoe, and they stand our severest winter with such protection. When grown for back lines the tangled foliage can be trained to grow all to the back simply by being drawn or pushed back in that direction occasionally, and then there is no difficulty in having a row of dwarfier plants close to them where such is required.

Can any one give information as to the merits of T. media and T. pumila? I have not seen them. They are much less, I believe, than the two I have spoken of. T. Burchellii has been discarded as worthless.—D. THOMSON.

POTATOES.

In watching the sailing for some past of the good ship, THE JOURNAL OF HORTICULTURE, a certain instinct as to its handling has caused me to think that any volunteering of mine would be superfluous. So many new and better sailors have appeared on board, that an old hand like myself had better remain ashore making practice, Corporal Trim fashion. But in a letter which I received from the Admiral lately, he there says, "You are not dead, &c. I never saw such a superior show of Potatoes as at a little local show at Daventry. How are they in Oxon?" Now, of course, a hail from the quarter-deck found me willing to push off and pull a rope; and as I have not been idle, I trust that my muscles and tactics may be found up to the mark, and allow me to appear creditably amongst the rigging.

At the Agricultural Show here, a few weeks ago, I overheard this remark—"You should tell your people about you (Santon Harcourt and neighbourhood), to come to the Woodstock Show, and they would meet with competitors worthy of their steel. I do not know where a better assortment of Potatoes can be met with than there." I really think the observation was a just one, and I never saw, with the exception of the Great International Show at South Kensington last year, a better assortment of Potatoes than what we had here this year. I take a little credit to myself for the result, for during a sixteen-years residence I have annually introduced some of the newest and best varieties from all parts of the realm; and although for certain reasons I do not now appear amongst them as an exhibitor, I still continue to introduce new and approved kinds on trial, both for the benefit of ourselves and our neighbours. The following are the results of my practice and observations as regards Potato-culture this year:—

On March the 18th, I planted Daintree's Seedling, Shutford Seedling, Mitchell's Early Albion Kidney, Dalmahoy, Lapstone Kidney. The Daintree's Seedling were well foliaged above ground by April the 26th, and the Mitchell's were peeping up. On the 29th, from the feel of the air and the look of the sky as I was walking down Piccadilly in the evening, my worst fears about them were fully realised. On my return to Woodstock on the 6th of May, they were black. The Shutfords at the latter date were just taking the lead of the Dalmahoy's, the Lapstones having by their tardiness escaped the frosts; but the Daintree's, not to be conquered, sprang forth again, and soon became equally forward to look at with the best of them. I did not attempt to dig the Daintree's this year as a first early, my practice last season having taught me that it was injudicious to do so. I allowed them to remain till after the earliest sorts, and then had, what all must acknowledge to be, an early Potato, which is a good cropper, of good size, and of the very best quality.

On June 2nd, we were using some of the last year's Daintree's, and if I had chosen I could then have begun and continued to dig new Daintree's. On July 23rd, I dug up a root of the latter, which gave twenty-four Potatoes, all of good size except two. They weighed 2½ lbs., and from then till the middle of January, when I anticipate the exhaustion of its store, they have, and will, constitute our preferable sort for cooking.

August 12th, lifted the crop. They were a beautiful sample, not one of them diseased, and they averaged from several careful admeasurements, 28 lbs. per four square yards, which gives within a fraction of 15½ tons per acre.

July 24th, dug a root of Dalmahoy's, which gave twenty-

five Potatoes, and out of them were seven not of fit size for cooking. They weighed 2 lbs. 2 ozs.

August 12th, lifted the crop. A clean, bright sample, and no disease. They averaged 27½ lbs. per four square yards, very nearly the weight of the Daintree's, which they very much resembled, both in top and tuber, but I do not consider them so good a Potato, because when the Daintree's are half cooked, and the water poured away from them, they will finish cooking—viz., steam themselves, and remain firm throughout though mealy. The Dalmahys under this treatment retain a "bone in them." They must be boiled till done, which will take ten minutes longer than the former, and then, though an excellent flowery Potato, they are not so good-looking, or of so fine a flavour as Daintree's Seedling. I shall expunge the Dalmahys from our garden, otherwise, unless under very careful management, it would become almost an impossibility to recognise them apart, and to keep them distinct. This is how I came by them: Last autumn a late worthy curate paid the rector a visit on his way from Marlborough into Staffordshire. I heard him apologise for the weight of his portmanteau, on account of a good sort of Potato presented to him, and brought in it from the above-named town in Wiltshire. Of course, I was thus placed at once on the alert, and the result was that part of them were exchanged for some Daintree's Seedling, as well as some Shutfords, and Mitchell's, into the bargain, the portmanteau leaving the rector still heavier than it arrived there.

July 25th, dug up a root of Lapstone Kidney—thirty Potatoes, twenty-two sizeable, and eight too small for cooking. Weighed 3 lbs.

August 12th, lifted the Lapstone, and they averaged 26½ lbs. per four square yards. A clear, beautiful-looking sample, and no disease.

I ought to mention that the Shutford Seedling came in before the Mitchell's Early Albion Kidney this year. I began digging them on June 2nd, and the Mitchell's followed.

SECOND PLANTING.

March 19th, planted the Racehorse, Mitchell's Early Albion, Walnut-leaf Kidney, Ash-leaf Kidney, Early (or Cracked) Shaw, Early Prolific, and one new seedling Fluke-shaped Potato (a cross between the "White-blossomed Kidneys and Wright's Kidneys," sent to me by post especially to try against the Ash-leaf Kidney).

The Racehorse and Mitchell's Early Albion I consider synonymous, and the Walnut-leaf Kidney to be its cousin German, coming in a little later and a little larger along with the Ash-leaf Kidney. I shall give up these varieties for the ridge. In fact, I shall only for the future coddle up a patch or two of the Mitchell's Albion, and the Shutford Seedling, as very early sorts, for the Daintree's Seedling are ready so soon, and are so much more profitable as a crop. The Early Shaws gave a very good yield, which I used in its entirety as a second early from the ground. It is too yellow for my liking. The tops of the Early Prolifics were monstrous this year, and kept green and growing to the last. I lifted them on September 28th, when they averaged 23 lbs. per four square yards. I consider this Potato to be a very good and profitable sort. It is white and good-flavoured, having eyes very deeply set; but the prefix "early" is a misnomer. They all appeared above ground about the same time.

Now for the Seedling, and thereby hangs a tale. It was a perfect-shaped, smooth-eyed, large Potato, and, as I just mentioned, was sent to me by post. In the process of stamping the tuber was split, and four of the most prominent eyes were reduced to a pulp. What Nasmythian powers our post-office friends appear to be possessed of when they become aware of aught destructible in a letter! Owing to his circumstance I am not enabled to report so favourably on the produce of the Seedling as I otherwise should have one. I cut the tuber into four sets, as only four weakly eyes remained to it. This caused me to scrutinise for their appearance many days after the others were above ground, and then they came up unequally. The haulm was distinct, and the foliage something like a dwarf Lapstone. It gave no blossom. It was a month after I dug the others planted at the same time ere I thought it desirable to correct the seedlings, so I can give no just estimate of their fitness. The produce is fairly good, but the haulm is not so good, and

Morris at the lifting. He is a judge of the esculent, and he said "it would do." I prophesy that it will become a favourite Potato for a field, and one with which I hope next year to become better acquainted.—UPWARDS AND ONWARDS.
(To be continued.)

HEATING HOUSES ON DIFFERENT LEVELS FROM ONE BOILER.

I HAVE a greenhouse and a vinery, both heated by fires. There is a difference of 5 or 6 feet in the level of the two houses, owing to the steep declivity of the ground, and I want to know if one boiler will heat the two houses without any undue pressure upon it. The most convenient place for the boiler would be at the lower level, and without understanding anything of fixing the hot-water pipes, it appears to me that there will always be a pressure upon the boiler of a column of water of say 6 or 7 feet—i.e., the difference between the highest pipe and the bottom of the boiler. If a tubular boiler be used, would this be too great for the boiler or the cemented joints of the pipe?—A SURFOLK MAN.

[We could advise better if you told us more about the position of the boiler. It would be most conveniently placed on the lower ground just where the ground rises to the higher level. If the boiler there is sunk enough for the top to be lower than the lowest heating-pipe in the low house, and T-flows and returns are used, you can heat the two houses separately, or at the same time, by means of valves. This would be the simplest mode. There will be no danger as respects pressure if the pipes in the upper house were made even higher; but it will be necessary that in the lower-level house there should be an open air-pipe 2 or 3 feet higher than the highest point of the upper-level pipes. If you do not like T-pipes at the boiler you might have a flow and return on each side of the boiler.]

WINTERING BEDDING-OUT PLANTS.

At page 370 appeared a few remarks under the above heading, and bearing my signature. I beg to observe that they were written in March, and formed part of a paper which I intended to send at that time, but somehow or other I failed to do so, and they must have been sent with a later communication. I trust, however, it is not too late to offer a word or two on the above subject, as the notes referred to were not on wintering, but on disposing of bedding plants in the spring, when every available place is filled to overflowing, and the weather is still too cold and uncertain to trust them out of doors without some means of protecting them.

In wintering plants, although it may probably be done in the way described, that plan would involve such an amount of extra work that many would be inclined to give up the attempt before the winter had passed. I have known many instances where quantities of plants have been stored away comfortably, as was supposed, in October, in such makeshift places as stables, summer-houses, spare rooms, closets, cellars, &c., where it was expected that they would sleep away the winter, and prepare themselves for a fresh start in spring; but when spring came a very small remnant, often not more than five per cent. of them, were found to be alive, and those in a blanched and sickly condition. It seems strange, but it is nevertheless true, that there are people who entertain the notion that plants may be stored away for the winter like garden-seeds, and such things, that have performed their office for the season. If such were the case it would be a poor speculation for the hundreds of small nurserymen and jobbing gardeners, around large towns, who put up glass structures for the purpose of wintering bedding plants, that they may gain a few shillings by them in the spring. Those who have small gardens and wish to preserve a few plants, not having a pit or greenhouse or any such structure, should not forget that living plants cannot be stored away like pieces of furniture, to be taken down again and used when required. If the plants can neither see, feel, nor speak, still they will not fail to show the result of neglect, and although a very trifling amount of attention

office to keep them alive, to give them none at all will surely result in their death.

Fish speaks of taking up Geraniums out of the borders, digging off the leaves, and packing them together in boxes, &c., or in a cold pit, expecting to keep them for use in the next season; but these will have such attention as is necessary, and by planting-out time next year they will be less healthy plants. This, however, is recommended as a resource when the supply of plants from cuttings is too small. Those who have opportunities of taking sufficient cuttings in July or August will have no occasion to preserve old plants, and though a pang of regret may be felt at the idea of consigning a lot of plants to the rubbish-heap, it is in most instances merely doing now what will have been done in the course of the winter.

I have kept large quantities of plants in various ways, and with an amount of trouble and labour that might have been avoided by a decided interest in the matter could induce me to undertake voluntarily. Sometimes my efforts have been followed with the much-wished-for success, and not infrequently with grievous disappointment after taking and sending cuttings by the thousand in July and August, filling old pits and frames with them in November, and then going to throw great numbers of them away in March. I tried the practice of taking up Geraniums out of the borders and storing them away in a cellar; but I cannot say the result has been at all satisfactory. Others, however, may have been more successful, and I by no means doubt the possibility of doing so successfully.

Those who can winter their bedding stock in suitable structures will have no difficulty to contend with other than the want of space. But where it has to be done in unheated structures the difficulty, as is well known to those who have made the attempt, will be very much increased, not only on account of more time being required, because there will be two great enemies to contend with, cold and damp, in a heated structure, there will be only one. Frost must be kept out by shutting and covering up, but doing this at the same time encourages damp and mildew, which is only dissipated by opening and uncovering, so that two wars are exerted in opposite directions. It will be seen, therefore, what constant attention is necessary. I have come to the conclusion that the best of all unheated structures for wintering plants are common wooden frames, such as are used round London. These are about 20 inches high at the back, 12 in front, 6 feet from back to front, and the lights are 3 feet 6 inches wide. These frames are made of one, or three lights each, the lights being easily managed. I would place 6 inches thick of sifted coal ashes, or a material, in my opinion, making the best flooring to put the pots upon; and round the outside I would bank up at least a foot of rotten dung, earth of any sort that will hold together, or any kind of stuff that will make a thick barrier to keep out frost. This, I consider, affords the best resistance to severe frosts than a nine-inch brick wall; four-inch or four-and-a-half-inch walls will want insulating in thickness in the same manner, and if built low, probably answer as well as frames, only they have the portability of the latter. I have generally used the dung to bank round the frames, as it is a good plan of getting the plants to rot and air the manure for potting purposes, and as it is usefully applied. In frames prepared in this manner bedding stock can be wintered with as little trouble as can be expected in unheated structures, and there is no risk of exciting the plants into growth before that may be done with safety, which is seldom earlier than April.

I have often found that where gardeners have practised wintering their bedding stock in frames, they keep the plants on the glass so long as frost continues; then when the covering is removed the plants are found in a half-dormant condition. Now, this practice is the most difficult to understand, and yet it is the one most likely to concern the safety of the plants. I have wintered Geraniums, Verbenas, and such bedding stock in wooden frames and brick walls, without any auxiliary heat, and always made a practice of pulling the litter off daily, even in the midst of frost and snow, and found that the advantage of doing so more than counterbalanced the danger of the plants being frosted; in fact, it is well known that a few degrees of frost will not hurt such plants if they are dry, when the same amount of

frost will injure them considerably when they are damp. If the frost reaches the plants when they have been closely covered for any length of time, the chances are that it will make sad havoc amongst them. This, of course, then, is the real gist of the matter. It is all very well to tell any person inexperienced in such matters that if he only possesses a garden-frame he can certainly winter a few plants in it; but this is only telling part of the story; a constant and daily attention is necessary, and more depends on the care and tact of the manager than on the frames.

If these notes are found useful it will be chiefly among the owners of small suburban gardens, to whom it yearly becomes a serious consideration as to how they are to prevent the apparent waste and loss of their bedding plants. I fancy it would amuse some of our gardening friends to hear of some of the shifts which I have seen adopted in such cases, and almost always with a like result—that is, the loss of the plants some time or other during the winter, and this, in nearly every case, because the plans adopted were based simply on the wishes or convenience of the owner without regard to the nature or wants of the plants.

The term "wintering plants" conveys something more than merely keeping them beyond the reach of frost. What I have said with regard to doing so in pits and frames applies to struck cuttings, to plants established in pots, and to plants taken up out of the ground and potted in September or early in October. But it will be seen that Mr. Fish talks of taking up plants even as late as November, picking off the leaves, and packing them together in pots or boxes, or on the bottom of a cold pit; but the experienced gardener, whose daily and yearly practice it is to attend to such matters, is in a very different position with regard to the treatment of plants as compared with the amateur, who handles only a few dozen plants in the course of the year, and those only during an hour of relaxation from more serious and important business. In the latter case the constant and daily attention to frames and pits is scarcely desirable, to say nothing of the work attached to them being none of the cleanest. It follows, then, that a better and cleaner method of wintering plants is greatly to be desired; and happily it is within the reach of everybody, and is pretty well known; it is to keep them in windows. I should be very sorry to deceive people by simply repeating the various ways and means of keeping plants that have found their way into print, and which are eagerly caught at by small growers, and put into practice as far as is possible with a certainty of failure. Common sense must tell any one that living plants are not to be buried in the earth or hung up in the air by their roots for seven months of the year, and then to be put in the ground to grow and flourish to the great delight of the cultivator. There must be forethought and a little work; those, however, who really have a partiality for flowers will accept these conditions as a matter of course; but then there are many who profess to have a partiality for flowers whose true motive in having them is merely because it is customary, who complain of the trouble they give, and eagerly seize any makeshift plan of disposing of them, which promises to preserve them and dispense with the trouble of constant watching, which the more rational course entails.

After all that has been said, those who do not possess a greenhouse or other heated structure will find the best and cleanest method of keeping a few plants is to keep them in their windows. Follow the advice of Mr. D. Thomson: Take some six or eight-inch pots, drain them, and fill with good porous soil; take good strong cuttings in July, remove the lower leaves, and insert as thickly as convenient round the pot; place them in the full sun if Geraniums; if Verbenas, Cupheas, Tropæolums, or other such bedding plants, place in the shade, and cover with a hand or bell-glass; if Calceolarias, wait till October and act in the same manner. Leave all out in the open air as late as can be done with safety; then remove them to the window where they can be placed on shelves, which can be supported by placing strong hooks in the window-frame, and slinging the shelves on wire or blind-cord. There the young plants should be watched, and kept as nearly dry all the winter as can be done without allowing them to shrivel up. Earlier in the season Mr. Thomson gave some directions for striking cuttings which it is scarcely necessary to repeat, but, as he truly says, six

or eight-inch pots are better than smaller ones, as the plants do not so quickly dry up, and preserve a more regular moisture, and I believe more plants may be kept in a given space than by using smaller pots.

Even those who possess a frame or small unheated pit will find the advantage of keeping their plants in windows, since, besides having them drier and more under the eye, they may sow a crop of Radishes in the frame or pit, and when these are used-up they can pot-off the bedding plants and place them in the frame. It will be found that the contents of a few of these store-pots when potted-off will fill a two-light frame, and if properly attended to in watering, &c., sturdy plants will be secured for planting out after the middle of May.—F. CHITTY.

CLOSE-PRUNING VINES—DAMPERS.

In your Journal for the 18th of November, 1862, you kindly answered my question on the close-pruning of my Vines. I will now give you the result, and have further to trespass on your kindness for an answer to my present inquiry.

I started my Vines as recommended, or rather I should say they went away without me in the end of February, the weather being very mild.

The Sweetwater had three old rods. Two of these broke so very irregularly, that I had to bring a young cane from the bottom and cut these away. The third rod had a few bunches of Grapes, so was allowed to remain, though very scant of shoots.

The Black Hamburgs had five rods, two of them, only, two or three years old. The three older rods had to be treated in the same way as the Sweetwater, for they broke in patches and bore no fruit. So these rods were cut away, and a very vigorous young cane brought up from the bottom with leaves at least 1 foot in diameter. The other two rods gave me fourteen or sixteen bunches between them.

The Muscadine, which had for two years been very shy, broke at every joint, and had two or three bunches almost on every shoot. The foliage and fruit were very small to what they formerly had been.

The Golden Hamburg broke pretty well; but did not fruit nearly so well, nor were the bunches so fine as in the year before.

The Black Champion next to it, first time of fruiting, had eight enormous bunches, which were the admiration and envy of all my gardening friends.

After reading your answer last November, having plenty of room between the Vines, I planted a Bowood Muscat at the warmest end of the house, a Lady Downes', and two Black Hamburgs, in order to gain a year should these old Vines have to come away. I shall, however, have to cut away one Black Hamburg next the Muscadine, seeing it did somewhat better than usual; but will you tell me if I am to close-prune these Vines again this season or leave a short spur 1 inch long with two buds as I used to do? The wood seems well ripened.—T. T. T.

P.S.—In your last week's Number you gave some important information respecting the use of dampers to flues. Do these remarks apply to the use of a damper with a saddle boiler or only to flues?

[There is no doubt that you have carried the close-pruning or spurring system to an extreme, and have cut away every bud from which fruit could be expected, leaving nothing but latent or imperfectly developed buds, and hence the irregular crop which your Vines have borne. The Royal Muscadine, which is a very free fruiter under any system of pruning, and generally makes a more numerous cluster of eyes at the base of the spurs, has, therefore, stood the severity to which you have carried this system of pruning in this case. From the success of the young rod of the Champion, and what you say of the Vines generally in former years, we cannot suggest any other cause of your failure. The close system of pruning, like every other, can be carried to excess, and had you followed a course between that which has caused your failure and your previous system you would have no doubt secured a crop. We always leave the bud at the base of last season's growth, and in very few cases do we ever prune closer, and such is generally termed the close system. When the Vines are well ripened there is no fear

of a failure, and the bunches, though shorter than when an eye or two more are left, are generally much more compact and serviceable, and the berries are larger.

In pruning this season you cannot err, if your Vines are well ripened, in pruning back to the bud at the bottom of the growth, and from which a leaf has been formed. There is no teacher so thorough as experience; and if you are afraid to cut back to one bud leave two, as you used to do, on every other spur, and you will have the thing exemplified before your own eyes, and there will then be no anxiety about a crop if all else is right. Whatever arrangement you carry out about leaving your young and old Vines, do not overcrowd your Vines. They should not be closer than 2½ feet at least.

A damper is a very necessary appendage to a boiler. By it the heat can be confined about the boiler, where alone it is wanted. In the case of a flue, if a damper is used at all it should be at the furthest point from the furnace, whereas with a boiler and no flue it should be immediately above the boiler, in order in both cases to retain the heat where its force is wanted.—D. THOMSON.]

CULTURE OF SPECIMEN MIGNONETTE.

RESEDA ODORATA or Mignonette is an evergreen under-shrub, perishing annually, as far as its bloom-stems are concerned, in its native country, Egypt. It was introduced into France in 1740, and was brought from the Royal Garden at Paris to Windsor by Lord Bateman, in 1742. Don, however, and Loudon give 1752 as the date of its introduction. There is a prevalent opinion that there are two varieties, the one an annual, and the other a shrubby variety known as the tree Mignonette. In the "Botanical Magazine," t. 29, *Reseda odorata* is described as an annual, and in the "Botanical Register," t. 227, mention is made of a *Reseda odorata frutescens*, or frutescent Mignonette, which is said to grow 2 feet high. I mention this circumstance in order to show that it is possible that there may have been an annual variety in addition to the one we now possess. Mignonette, or "Little Darling" of the French, is much cultivated on account of its fragrance, and it is rather remarkable that such a "fragrant weed" (for its beauty is to me unseen), should remain so long unimproved. Beyond a solitary variety it remains in the same unimproved condition as when first introduced; and although it may not be possible to make it more ornamental, it certainly is worth an effort to strive to obtain a hardy variety. There are more than two dozen species, some of which would, no doubt, readily yield to the hybridiser's pencil. Of those most likely to afford the best results seem to be *Reseda fruticulosa*, a small shrubby species from Spain, and a rather taller variety from the same country, *R. bipinnata*. I have made several unsuccessful attempts to get the pollen of *R. odorata* to take on the British species, *R. lutea* and some others, but only in one instance did the pollen take effect, and the plants raised were more tender than the parent, *R. myriophylla*. Who will be the first to obtain a hardy sweet-scented perennial Mignonette? Growing plants of Mignonette for in-door decoration is somewhat difficult of attainment, though by no means so difficult as is generally imagined. There are several methods of growing tree Mignonette, but I shall only describe one, and that is as simple as it is satisfactory in its results. Early in June select as many plants from the out-door sowing as are wanted, making choice of those that are stiff, strong, and promise a vigorous growth. Take them up with balls, and place singly in 48-pots. The plants should not be less than 2 and not more than 3 inches in height. The compost best suited for potting at the early stages of the plant's development, is light loam and leaf mould in equal parts, with a free admixture of silver sand. The plants, or rather the pots containing them, should be plunged in coal ashes in a light and well-ventilated situation, but shaded from the sun from 10 o'clock in the morning until 4 in the afternoon, and this is the position they should occupy until the beginning of October. After potting the plants must be gently watered and shaded with mats for a few days until they become established. Water must be given in dry weather, and once or twice a week they should be watered with liquid manure much diluted with rain water.

By the middle of July the plants will be growing vigorously, when, if the pots are full of roots, they must be potted into 32-sized pots in the same compost as before. A gentle bedewing of the plants overhead after hot dry days will much refresh the foliage, and watering being duly attended to they will make rapid progress. When the leader shows for bloom put in a stick in the centre, which should be about 2 feet long, a trifle less than the thickness of the little finger, and painted green. Pinch off the bloom on the leader on its first appearance, which will cause the side shoots to grow strongly, the blooms on them being pinched out as they appear. This pinching is to be continued throughout the summer until further notice. Take care that the plants do not root through the pot, it being a good practice to lift them frequently to see that they do not. Tie the leader to the stake, and peg down the side shoots so as to feather the plants to the pot.

In August pot them into 24-sized pots, using a compost of light turfy loam half, the remainder leaf mould or peat and crowding two years old in equal parts, adding a liberal sprinkling of silver sand. The drainage should occupy about one-third the depth of the pot, and must be made perfect. A little sphagnum or cocoa-nut fibre placed over the crocks will prevent the drainage becoming choked. They will require but little water, but they must not be allowed to suffer from the want of it. When they really need watering give them enough to reach the drainage.

Early in October they should be potted into their blooming pots, 9 inches in diameter, which are large enough for ordinary purposes. The drainage must be well attended to, and the neck of the plant kept somewhat high. After potting they should be placed in a cool, dry, light, well-ventilated greenhouse, and as near the glass as possible. They will require but little water, and yet the foliage must not be allowed to turn yellow from the want of it.

Provided the plants have been duly pinched—i.e., the flowers nipped off—and the shoots regulated so as to form an even-shaped plant feathered to the pot, and tapering upwards, they will be fully 20 inches in diameter, and from 18 inches to 2 feet in height by the middle of December, after which time the flowers should not be pinched off, but allowed to bloom. No water must be given so long as the soil contains enough moisture to maintain the plant without flagging, and then water must be given freely; for a little to-day and a drop to-morrow is slow poison. Very weak liquid manure may be given at every alternate watering, but it should be heated to a few degrees over rather than a few below the temperature of the house in which the plant is growing. The plants will bloom finely through the winter, and are the delight of the ladies. Care must be taken to cut out all spikes done blooming, as they weaken the plant, and are unsightly. The plants will continue in good bloom until June, when they may be cut back a little, some soil being taken out of the pots, and its place supplied with fresh compost. The plants will grow freely and bloom continuously through the summer in a cold, light, well-aired greenhouse or conservatory, and on through the autumn and winter; but the blooms they afford are not equal to those from younger plants either in fragrance or size. It is advisable to raise fresh plants annually, retaining the old until such time as the young commence flowering. By this plan Mignonette can be had every day in the year.

In conclusion, I would make a few general remarks. Mignonette, when subjected to artificial treatment is impatient of damp, particularly in its early stages, but this is obviated by keeping the plants outside, for it is not uncommon not to sow the seed until the beginning of August, which inures the young plants to the fatal moisture of the autumn months. Watering overhead is a dangerous but indispensable process, and should only be practised on bright sunny mornings, and then it should be given through a fine syringe. The shoots are so easily parted from the stem that syringing should not be so copious as to cover the foliage with water and render it unable to carry the weight, or the shoots are sure to slit or become detached from the stem. Better not to syringe at all as do this, for nothing makes a specimen look uglier. The plant is also extremely susceptible of variations of temperature, extremes of heat and cold being positively injurious to its well-being. The temperature should, therefore, be kept steady, and ranging

near 45°, never lower than 40° or higher than 50° except on rare occasions. Too much air and light cannot be given nor too much sun during winter. Another essential is that the plants be kept near the glass, so as to prevent drawing, and to give them all the strength possible. These points attended to, the plants will grow with a vigour equal to the wishes of the most sanguine cultivator or admirer.

Lastly, allow me to protest against the practice of tying every shoot to a stake. Some people imagine or have a fancy that every shoot requires a stake, and one it must have. Nothing, however, looks so unnatural. Symmetry can be had without stakes; and if a plant cannot stand on its own legs it is grossly maltreated by being tied and made to assume a figure at once unnatural, extremely disagreeable to refined taste, and altogether unlike assisting Nature. It is deforming her, and generally meets with the disappointment that violations of Nature's laws so justly merit.—GEORGE ABBEY.

[The above is written to meet the wishes of "J. J. J." her query at the time being replied to briefly.]

BURYING DEEPLY THE ROOTS OF ROSES.

HAVING made a Moss Rose-bed last spring, and being now desirous of raising it 9 or 10 inches, I wish to know if putting earth up the stems of the Roses to that height will injure them. I do not wish to take up the Roses again, fearing it might spoil their flowering.—A. M. A.

[To earth-up the stems of your Roses to such a height would be decidedly injurious. If the Roses are in good condition they will bloom next year if carefully lifted and replanted, which is the only way that will admit of the soil being raised so high without being injurious. If the roots are carefully disentangled from the soil, and as few of them broken as possible, at the same time preserving a ball of earth at the stem if it can be done, and if planted immediately, there is no fear of their not flowering.]

GARDENERS' NAMES FOR FLOWERS.

MY only reason for taking up this subject was simply to condemn those who, having themselves secured the advantage of a liberal education, are inclined to sneer at the shortcomings of others, who, without any fault of their own, have in this respect been less fortunate.

Gardeners are themselves very frequently the sons of gardeners, and the employers of gardeners must know full well that their gardeners are, generally speaking, seldom in a position to give their sons an expensive education, however anxious they may be to do so: consequently classically educated gardeners are not to be expected. Still, by dint of patience and perseverance, assisted by the numerous works on horticultural subjects which are almost daily issuing from the press, including accentuated catalogues of plants, &c., many gardeners do and nearly all may attain to something approaching a correct pronunciation of the names of flowers.

I admit that, on hastily perusing the first letter of your reverend correspondent, the "WILTSHIRE RECTOR," on this subject, I felt inclined to say with young Norval—

"That there are men
Who borrow friendship's tongue to speak
Their scorn," &c.

But I am now quite ready to admit that I have judged your correspondent wrongfully; and if my former communication to you on the subject contained anything offensive to him I sincerely regret it, and from the conciliatory and kind tone of his last letter I feel quite sure that he has freely forgiven it. I have no hesitation in fully agreeing with him that it is much better to endeavour to raise the men to the correct standard than to sink the standard to the men. And I sincerely trust that the kindly advice of your reverend correspondent may be instrumental in stimulating young gardeners, at least to endeavour to attain a correct pronunciation of the names of the plants which many of them succeed in cultivating so well.—G.

MISTLETOE ON THE GOOSEBERRY.—I saw in a garden near Maidstone, Kent, Mistletoe growing on the Gooseberry

bushes, which were very old, and of large size. The Mistletoe was very strong. I did not notice it on any other tree or bush except the Apple.—KATE.

VARIEGATED ARABIS.

A PLANT of this miniature gem came into my possession last spring with the name of *A. lucida variegata*. Whether this is the original kind or not I am not in a position to say; but for the satisfaction of your correspondents I have no hesitation in asserting that this identical kind is deeply margined with pure yellow—not a dirty white—and is, without doubt, a most valuable addition to the class of dwarf variegated edging plants. It will prove a great acquisition to the amateur, for it is quite hardy, is readily increased from side-shoots or offsets, and grows freely in any good garden soil. Slugs are its greatest enemy, and it requires careful watching in winter to prevent these pests from riddling its delicate leaves. Grown as a dwarf miniature pot-plant, it looks exceedingly pretty for a flower-stand or small vase.—JOHN EDLINGTON, *Crom Castle*.

TODMORDEN BOTANICAL SOCIETY.

A MEETING was held on the 2nd ult. Many specimens lay on the table: among the more notable were monster examples of the curious *Polyporus betulinus*, gathered from Birch trees in the neighbourhood. This may be regarded as a semi-commercial fungus, being employed, at times, in the manufacture of razor-strops. It is highly interesting, as, indeed, are most of the fungi. The fungus family, moreover, is a useful one, very many species, although not regarded here as edible, being the prized esculents of other countries.

A communication was read from Mr. J. Holt, the Secretary of the Prestwich and Pilkington Botanical Society, announcing for sale the renowned "Shepherd Herbarium," comprising 160 vols. (folio) of dried specimens of plants. The Secretary was instructed at once to communicate with Mr. Holt, with a view to ascertain whether the herbarium can be forwarded to Todmorden for inspection by the members, and, in case of a difficulty in this, a number of gentlemen were appointed a committee or deputation to go and inspect on the Society's behalf.

Mr. J. Lord, Bridge-end, Todmorden, presented to the Society one hundred and fifty sheets and thirty packets of dried specimens of British mosses by name, being the whole of the bryological collection of the late Mr. Edmund Holt, senior.

Edmund Holt died some twenty years ago. He was well known throughout the Todmorden and neighbouring valleys as an enthusiastic botanist and naturalist, and a man of strong individuality withal. His shrewdness and sagacity were uncommon, and his "sayings" are still quoted in the neighbourhood as oracular, and that not seldom. "As old Ned Holt used to say," is the phrase. Who hasn't heard it a hundred times? Whilst alive, "old Ned Holt" must have been a power, influencing by no means a narrow circle, and now that he has been twenty years dead, his words (or "sayings") are a power still. He was commonly pronounced an "oddy"—a "curiosity." But why was he odd?—why was he singular? Because at every step he took over this earth Holt found "the Beautiful," "the Wonderful," and admired and wondered accordingly (perhaps somewhat demonstratively), whilst the purblind people about him saw "little or nothing to admire or wonder at." The glorious sun shining in the heavens and casting its wealth of colours over the clouds and over the earth, was no miserable "farthing candle" to this man. "The Primrose by the river's brim" was more than a yellow Primrose to him, and therefore did the Peter Bells amid whom he lived and moved regard him as a "curiosity"—an "oddy." Such men—men whose hearts and minds are opened to the beauty of the universe—are too much of "curiosities" and "oddities" even now. "Tell us," if we did but know it—Holt knew it—our eyes we walk in Paradise—Holt's heart was "odd." Holt's heart was the heart of every true lover of God and of His creation. He was a man of God, and a man of the world.

apostrophising in (supposed) solitude his favourite flowers as he botanised along our hill-sides through the changing seasons in all weathers. The beautiful flowers were friends of his, and their blue eyes were as dear to him, and almost as sentient, as the blue eyes of his human friends. However much hollowiness or falsity there might be in the world's blandishments, with the flowers, at least, he could hold *par* converse. It was a holy fountain this, at which he could refresh and fortify his soul when wearied by the narrow cares and crosses of life. Each of us can do the like! Thousands of miles did this man wander whilst searching for the humble Mosses and Lichens, which to common unobservant eyes are invisible, or, if seen, are passed carelessly by.

"Oh, many are the poets that are sown
By Nature—men endowed with highest gifts—
The vision and the faculty divine,
Yet wanting the accomplishment of verse."

CHICORY: ITS USES AND CULTURE.

OTHER readers of your Journal besides "J. S." will probably be interested by an account of the plant which now constitutes one-half of what is termed "coffee." I therefore submit the following:—

Chicory or Succory (*Cichorium intibus*), is an indigenous fusiform or taprooted perennial, abounding in some parts of the country, but of local rather than general distribution. The leaves are strap-shaped, about 3 inches wide and a foot in length, not unlike Dandelion (*Leontodon taraxacum*), to which it is closely allied. The flowers are produced on long spikes, branching and tapering upwards, which give the plant a pyramidal habit and elegant appearance. They are of a bright and lovely blue colour, each the size of a crow-piece, and are produced profusely from June to September. In a wild state, the flower-stems do not attain more than from 2 to 3 feet in height, but under cultivation they grow to 6 or 8 feet; and in the herbaceous border none of the vaunted beauties of the flower garden is more ornamental in its season. The roots are large, succulent, and elongated, not unlike white Carrots, but having a multiplicity of fibres adhering to them like Salsafy.

The leaves when blanched are an excellent substitute for Endive, and are, therefore, used as a salad. In addition to their use as a salad, they afford a great bulk of herbage, which is considered good food for cattle. The roots form the Chicory of commerce.

1st, AS A SALAD.—For this purpose the seed is sown about the middle of May, in drills a foot apart. The ground is frequently hoed between the drills, and the plants are thinned out to 6 inches apart. Beyond hoeing between the rows and keeping clear of weeds, the plants need no further attention until November, when the roots are taken up and stored away in a cool place, so that they may be at hand for forcing. The tops are cut off about an inch above the crown; for these roots, unlike those intended for roasting, are wanted to grow. If a dark and rather warm cellar is at command, the roots may be placed there in moist soil with the crown above the surface. A temperature of 50° is quite high enough; for if brought on too fast the leaves are very narrow, or little better than the midribs of white Beet—in fact, they cannot be forced too slowly; but still the quicker they are forced the less bitter is the salad. It looks better when the leaves are broad, and these should be cut when about 6 inches in length, in which state they make an excellent substitute for Endive, but, like substitutes in general, not half so good as the genuine article. When a cellar is not at hand I have put about a dozen roots in a 12-inch pot, and after thoroughly moistening the soil placed it under the shelves or tables of any house with a temperature above 50°, but not exceeding 65°, and then inverted a similar-sized pot over it, closing the holes and other openings with clay. One of these pots will afford a good-sized daily salad, and sufficient pots should be introduced at weekly intervals to meet the demands of a family. Pots, however, not being always at hand, I have hunted up a narrow box, and knocked one end off, nailing on the loose side, and then bored holes all round about an inch in diameter, and about the same distance apart. Commencing at the bottom, I put about an inch of well-moistened soil just level with the first holes, and then placed the roots with their crowns just

peeping through the holes; add soil, pressing it firm, then more roots, and so on to the top, when we have a hundred roots which will afford twelve good salads. The box may then have the end nailed on, and be placed on end in a Mushroom-house, or some such dark and warm place. Three such boxes are enough for a good-sized family, introducing one ten days after the other, and refilling or otherwise as circumstances may require.

2ND, AS HERBAGE FOR CATTLE.—My opinion of this is that cattle are not so fond of it as to "devour it greedily," which is what some say they do. I, however, have seen many acres of Chicory, and find that cattle eat everything in the field in preference to it. They leave it the last because they do not savour it. Let new-fangled farmers say what they will, nothing is better than grass and some firm sweet Mangolds and Swede Turnips for feeding cattle.

The seed for this purpose is sown in the beginning of April in drills about 9 inches apart, and is hoed and thinned to 6 inches apart in the rows. By July the plants are strong, and as this happens to be the time when pastures are becoming bare, the cattle are turned into it. Some of the plants will run to seed, and to these the cattle are more partial than the leaves. Chicory affords a supply of herbage until late in the season.

3RD, ITS ROOTS AS COFFEE.—The soil should be rich, friable, sandy, and deep. It should be dug or ploughed deeply in the previous autumn, and laid up rather rough, so that the frost may pulverise it. If the soil is poor it should be heavily manured in autumn, prior to its being turned up for the winter. The land is better when in good heart to begin with, for newly-manured land is apt to cause the plants to run too much to top without giving a corresponding amount of root. The ground should be cross-ploughed in the spring, dragged or heavy-harrowed, doing it in dry weather. Couch and other noxious weeds should be thoroughly eradicated before an attempt is made at growing this crop; and the ground should be naturally, or be made, something like flour by the second week in May. The soil cannot be too fine nor too rich for Chicory, as long, thick, straight roots are the object aimed at. The field having a fine powdery surface by the second week in May, the seed is then sown on the level with an implement known as the "Chicory-drill," which deposits the seed in rows 12 inches apart, about half an inch deep, and a like distance from seed to seed. A wooden roller is mostly attached to the drill, behind the coulters, which closes the drills after the seed is distributed. In case of there being no roller attached to the drill, a light wooden roller is passed over the sown part before the drills become dry, so that there may be no seed lying dormant until rain falls. The seed should be new, for plants from old seed are more apt to run to seed than new. Five pounds of seed are usually sown per acre.

Chicory land is mostly very prolific in annual weeds—as Chickweed, Groundsel, &c.: therefore the hoe should be plied between the rows immediately the plants indicate where the rows are. When the plants are fairly in rough leaf they should be thinned to a distance of 6 inches apart, taking away the weakest and leaving only the strongest. In thinning it is a good plan to strike the drills crosswise with a hoe 5 inches wide (also termed a Chicory-hoe, for this plant, being a special crop, has tools especially set apart for its cultivation from beginning to end), taking two rows at once, a boy or woman following the striker to single out the plants. In a short time after the singling-out the whole will require hoeing again, and the rows to be run over to make sure of the plants standing singly or at the proper distance apart. After this the hoes are plied to keep down weeds and benefit the plant by frequently stirring the surface. Weeds must not under any circumstances be allowed to get ahead, nor the surface to become baked and hard, for this would render the produce inferior in size and quality. This crop cannot be too highly cultivated, nor can the soil be hoed too often until the plants attain the size when hoeing would injure the crop by breaking the leaves.

After discontinuing hoeing, the plants need no further attention until November, when the roots have to be taken up. This operation is effected by means of a Chicory-spade which is handled like another spade, so far as the shaft and hilt are concerned; but the digging part is only about 2 inches wide and 1 inch in thickness, and is thinner towards

the bottom. This implement* is about 1 foot 6 inches in length of blade, and a shoulder is put on the shaft on which the foot is placed in thrusting it into the soil. This instrument is thrust down by the side of the Chicory plant as near to it and as perpendicularly as possible. The operator then commences "prising," or weighing down with the right or left hand, whichever he happens to have on the hilt of the spade, and thus cuts or breaks the root a good depth below the surface, and having the top in his other hand the root is drawn up and laid on the surface. He does this in half a minute. After him follow women or boys, who cut the tops off quite close, and throwing the roots into rows they are put into carts and taken to be washed. A running stream is best for this purpose. A sort of crate made of laths is used. It is 6 feet long and 3 feet wide, the laths being nailed so that half-inch interstices or openings are between them. The crate is open at the top. It is fixed with four stakes so as to be clear of the bottom of the stream, that dirt may pass away, and into it the Chicory is put. With a short-headed wooden rake with very long teeth the Chicory is moved to and fro until white and clean, when it is put into carts as clean as the Chicory itself, and conveyed to the kiln to be prepared for the grocer. Care must be taken to well wash the Chicory, and to cut the tops quite close, or the Chicory-drier will cavil about it, probably reject it owing to its not being delivered according to bargain, or take so much per ton off for the dirt on the roots and the waste of the top, which must be done before it is dried, for Chicory is gritty enough without dirt. The roots are then cut transversely into slices and dried in a kiln; but I omit the process, as no written directions would avail "J. S." without plans and details which I am not provided with. Personal inspection and practice are necessary to the proper drying of Chicory, and a kiln is hardly necessary for one grower. The usual plan is to sell the raw produce to the owner of a kiln, as a kiln will dry the produce of several growers.

After Chicory is dried it is sold to the Chicory-roaster, by whom it is submitted to the action of heat in closed iron cylinders similar to coffee, and after roasting the slices are broken into what are called "nibs." The roaster not unfrequently uses a small portion of fatty matter, as lard, in the course of the process, and, finally, though not always, dusts the "nibs" over with some red colouring matter, as Venetian red, to impart brilliancy of colour.

The produce of an acre of Chicory is from four to five and even six tons, and the roots were formerly worth from £8 10s. to £10 10s. per ton; but now I am informed by Chicory-growers, that it is not worth growing, as it impoverishes the land, and does not pay so well as other agricultural produce. For these reasons they have given up growing it. Where once there were an hundred acres of Chicory in a township, now there are none but the roots that have escaped from cultivation.

Analysis shows that Chicory contains none of the active principles of the three non-alcoholic beverages—tea, coffee, and cocoa. It contains none of their refreshing and invigorating properties, having neither thein, nor caffeine, the respective active principles of tea and coffee: therefore, it is very questionable indeed whether an infusion of Chicory roots is of any value as a beverage. It certainly is no substitute for coffee, but it is said to be an aperient, and at other times acts as a diuretic. Taken along with coffee in the proportion of 35 per cent., it is said to produce a sense of weight at the stomach, causes languor and headache, and has been assigned as one of the exciting causes of amaurosis. It contains no essential oil, therefore, has not the fragrance of coffee. Dandelion roots make as good coffee as Chicory, and are a better medicine, though neither of them ought to be taken as an article of diet, yet popular taste seems as if it ran after the most nauseating draughts.—GEORGE ABBEY.

GERANIUM LEAVES FOR CUTS.—The leaves of Geraniums are an excellent application for cuts, where the skin is rubbed off, and other wounds of that kind. One or two leaves must be bruised, and applied on linen to the part, and the wound will become cicatrised in a very short time.—MISS FRY.

* It is the best of all implements for eradicating Docks in meadows or pastures.

in front are richly ornamented by vases on plinths and pedestals, about 17 feet apart.

Of the beauty of this upper flower garden, its artistic tracery, masses of flowers, beautiful statuary, and handsome

urns and vases on the balustrading, with a small temple at the south-east and south-west corners, we should not be able to say anything to please ourselves, and, therefore, feel much pleasure in being able, through Mr. Henderson's



kindness, to present our readers with a plan of the fourth part of this garden, that they may see at once what we should fail to describe. The other three quarters are the same as that given, so that our young friends who feel disposed may make a full plan for themselves.

The centre is the noble fountain with its elevated statuary of Naiads, water nymphs, &c. The fountain has a broad kerb of stone.

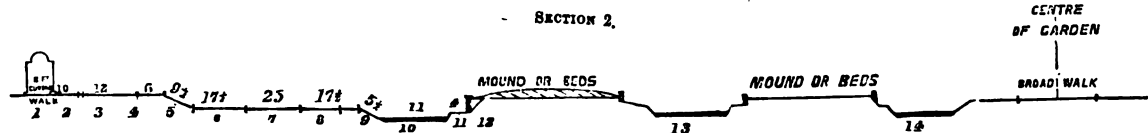
Though each of the four panels is a counterpart of the rest, it will be observed that each panel is planted on the principle of insuring a great amount of variety. The Yews and Humeas also formed a nice connecting link with the Humeas round the fountain, and did away with all impressions of monotonous flatness. The chain pattern at the side was a gem of beauty. The rains had slightly injured the circles of Geraniums, but the Lobelia and the Gazania were in their glory.

We now pass down the wide platform semicircular stone steps, six in number, and enter upon the central walk of the Italian panelled-garden. This walk is 40 feet in width. The distance from balustrade to lake is rather more than 240 yards. The width across of this Italian garden is altogether three times that of the upper flower garden, or 210 yards, the ground extending equally to the east and west. On each side of the steps in front of a wall that supports the south balustrade of the flower garden is a border of flowers, among which that old favourite *Salvia patens* was conspicuously beautiful.

Besides this wide walk in the centre of 40 feet, there are also wide walks at the north end next the flower gardens, and across the lower end behind the balustrade that separates

the garden from the lake. On the same level as the central walk there are also two longitudinal walks, one on each side, 25 feet in width; and besides those at the ends, there are two more cross walks which divide the space into six divisions, not equal, but the two middle ones so much larger than the four end ones as to be something in the same proportion as five is to two. The beds in these panels are in two compartments, nearly on the general level of the gravel walks, but with sloping banks and lower levels all round and between them. All these beds have a raised edging or ridge, a foot in height and as much in breadth, of various things—as Oak, Box, Yew, Berberis, Cotoneaster, Ivy, &c. Each of these six panels or gardens has a fountain in the centre, the largest two in the two middle ones—that is, six in all, three on each side. The centre of these fountains is 105 feet from the centre of the middle walk of 40 feet, which makes 210 feet from fountain to fountain crosswise, and thus the three fountains on each side are in direct line with the east and west-end balustrading and vases of the upper flower garden.

Both sides of this garden are bounded by a sloping bank and raised terrace, with walk, &c., some 4 feet above the level of the panelled garden. On the west side this is separated from the park by a shrubbery of ornamental trees and evergreens. On the east side it is separated from lawns and shrubberies by an arched walk covered with creepers, &c. This as well as the position of the panels, or beds, will be seen by section 2, which takes in half the width across from the arched walk to the broad middle walk. Take the lower line of figures as references, the upper giving the distance in feet.



and notwithstanding the masses of plants required elsewhere, these too were grouped with the gayest colours. This, also, was done to a certain extent this season, and a number of large beds were brilliant with annuals in the end of August, and others had been quite as beautiful when the family were there to see them. Circumstances to which we need not here allude render it desirable to lessen the vast masses of bedding plants; and though, no doubt, a little may be borrowed from showy annuals, more than a beginning has been made to fill the beds with permanent plants—that is, that will require less looking-after. Many beds have, therefore, been filled with China and free late-blooming Roses; others with Berberry and various dwarf shrubs of striking foliage; and, we are convinced that when all, or mostly all, the beds are done in this way, it will present a much better contrast to the present rich flower garden—will yield on the whole much more of the pleasures of variety—will call for even more plant-knowledge and cultural skill—and, if not so brilliant in summer, will present from the windows of the mansion a far more effective picture in winter and spring.

In one striking feature of this garden we noticed a change since our previous visit many years ago. Then there were the finest-headed specimens of standard Portugal Laurels



This will likewise show the level of the beds, with slopes, and the low level of 11 feet in width all round each compartment.

Besides the plants of Yew and upright Cypresses, the most of the beds in these compartments were of large size,

we had ever seen, grown in large boxes to resemble Orange trees, and vying in size with the largest Orange trees imported at times from Italy and the south of France—such as may be seen at Wrest Park, Bedfordshire, and Holland House, Kensington. Set at regular intervals of from 70 to 80 feet apart by the sides of the walk, the deception, as to Orange trees, when looked at from a distance was complete, and they were even more beautiful in winter than in summer. The terrible frost of 1860 and 1861, however, settled their beauty, the elevation of the roots in the boxes no doubt rendering their destruction more easy. Nearly two years ago very nice plants were obtained from Messrs. Lane, of Berkhamstead, which now average (and the plants are very much alike), 5 feet in height of clear stem, and $4\frac{1}{2}$ feet in diameter of head, and all look healthy and vigorous. The mode of planting by Mr. Henderson, as likely to guard against severe frost, is worthy of especial notice. To keep up the idea of Orange trees, boxes are still used. These are very neat, 3 feet 8 inches on the square, and 1 foot 10 inches deep, with 10 inches of stone below that, on which the bottomless boxes rest. The plants, then, were carefully planted in the ground, the soil rising as high only as the top of the stonework and not at all into the box. At present, to keep up the deception the box is filled with fern, so that a visitor that did not know otherwise would think it was merely used as mulching. A false bottom of slate is to be put across near the top of the box, and that covered with soil will give the idea that the planting has taken place in the usual way. Security and appearances, and, perhaps, giving in to a prejudice, harmless, however, will be combined. The boxes are placed on the lawn by the sides of the walks. There are three dozen in all, nine on each side of the wide central walk, and nine along each of the two longitudinal walks on the side next the panel gardens. They are so regulated that a box stands near the corner of each of the cross walks.

The raised side terraces of these gardens are embellished and enlivened with massive seats, statuary, and vases; but the most conspicuous of such objects, in an artistic point of view, is a colossal group of bronze statuary at the end of the middle walk, close to the lake, representing the triumph of Perseus over Medusa, the only sister among the dread Gorgons that was subject to mortality, and whose very look turned all who beheld it into stone. And no wonder, for the severed head held in the hand of Perseus has not only serpents entwined in the hair, but every drop of blood as it oozes out becomes a serpent, and thus enough of them are the whole, with their progeny, to keep in countenance the fable, and enable them to spread over the whole of Africa. We presume there will be little difference of opinion as to this statuary when looked at by the eye of the anatomist, the sculptor, or the painter, and yet from the jar it gave our own susceptibilities we might question its fitness for the position in which it is placed. We seemed instinctively to long for a group of the Graces; something like the statue on the hill, to commemorate family honours; something or anything calculated to arouse thoughts of peace, hope, goodness, and happiness, as more in accordance than "Gorgons dire," with the elegant refinement and beauty of these gardens, and the charms of the clear, placid lake, with its side background of ancient Oaks, not only speaking of the past, but in their health and luxuriance inviting us to look forward to the "good times coming," which no doubt they will be privileged to witness.

The waters of this fine lake consisted originally of the stream of the Trent, arrested by means of an embankment thrown across the lower end, but in floods so much mud was carried in, that silting-up seemed merely a question of time. To remedy this, Mr. Fleming undertook the onerous task of changing the course of the river, and supplying the lake from a clear rivulet, and this also enabled him to drain a miasmatic marsh of many acres, and turn it into part of the extensive pleasure grounds. Neither he nor Mr. Henderson, however, with all their care, have been able to eradicate the broad American Waterweed, which is threatening to take possession of our best sheets of water, and become a nuisance and a hindrance in all water-communication by canal or river. It is, however, pretty well kept under at Trentham; but as far as the little chance of completely eradicating it, we have to look to the future.

and concreted, as at Carton, and no mud allowed to accumulate.

With two or three unconnected remarks we will for the present bid good-bye to Trentham. First, as respects visitors to gardens. Through Mr. Henderson's great kindness we were enabled to take a leisurely survey, and obtained from him all the information we asked for. The suggestiveness of much as to valuable practical details will be our apology for this ill-arranged lengthened outline of the place. The being treated as a privileged person, and not as a mere casual visitor, rendered it possible for us to do so. As far as we know, there is no objection to visitors; but then when they are so numerous as at Trentham, the time allowed for parties in general must be very limited—little more than a quiet walk through. In places far less than Trentham we have heard of endless complaints on this score, especially from people who had come from long distances. In the latter case it would always be advisable to make a distinct arrangement beforehand. Even in rather small places there is also often something like a grievance because parties are not attended by the gardener. Come when they will, they expect he will be in readiness to receive them. If the gardener were to intrude upon them when particularly engaged that would be quite a different thing. No class of men have done so much as gardeners to oblige and serve the public, and often with scant courtesy for their trouble. The public should never get so much attention as to interfere with duty to the employer, who pays the gardener for his services. If general visitors are attended by any one deputed for that office, they should be content and thankful. No attempts should be made to interfere with the time or the engagements of the gardener in such circumstances. On this account, too, none but private friends should intrude as garden visitors after working hours. We candidly state that for next to perfect strangers we have lost many evenings from this practice, because we could not pleasantly say No, and have had to make up by want of sleep in consequence. In all popular gardens in densely-peopled neighbourhoods, it is a good plan for gardeners and for visitors to have a few days or afternoons in summer set apart in which visitors are admitted without attendance. In such cases visitors should rigidly confine themselves to the departments thus free of access to them, and scrupulously refrain from all that is forbidden. The regulation-breakers are only confined to a few of the "fast" order, who think it makes them big and like gentlemen—save the mark!—to show off their airs and would-be independence, for which the best reward would be a good ducking in a horse-pond, to take their starched bad manners out of them. Mind, we know nothing of the conduct of visitors at Trentham, except what is right; but the numbers that resort there have brought these ideas to our mind and our pen. It is always a misfortune when the misdeeds of a unit or two tend to deprive thousands of worthy people of a privilege and a pleasure.

Secondly. Though in many places we have seen finer trees and plantations, and bolder and more striking scenery than at Trentham, it would be difficult or next to impossible to find any place at all comparable in size, or, indeed, of any size, where a greater attention is evinced to order, neatness, and superior culture in every department. That attention is seen in everything, from a Pine Apple down to an annual Candytuft. This is all done with the greatest attention to economy, the £ s. d. matter is kept steadily in the foreground. No doubt Mr. Henderson has advantages in having his own work-horses, &c., and being thus far independent of beseeching for help in this way; but still there can be no question that many in small places would here gain valuable lessons on economics, and the undesirableness of having even one corner which they would be ashamed for other people to see. The peculiar mode of management adopted, there being no foreman properly speaking, must require from the superintendent an amount of energy, bodily and mental, constant thought, and never-ceasing care, of which none can form a correct idea, except they who have been placed in similar circumstances and under such weighty responsibilities.

And once more. But for exercising too much liberty, we might direct the attention of our younger brethren to the superintendent of these gardens, as another evidence of the

patience, activity, attention, self-dependence, and self-culture. True, there are but few Trenthams to reward the aspirant for fame and distinction; but the smallest garden will be made the most of in proportion to the activity combined with intelligence brought to bear upon it, and just in the same proportion will the gardener be happy and comfortable in his work. We would ever advocate self-culture in intelligence, not so much to fit a man for a great place—not so much to enable him to keep it when he gets it—not merely to insure him any social distinction and elevation—but chiefly and above all, when united with self-control and moral principle, as the means for insuring happiness and elevated enjoyment. His house may not be large, nor the most comfortable, and the locality may be so secluded that he can have little social converse; but the mental wealth of palaces, and mansions, and noble halls, and institutes of learning, are all waiting for his use; whilst in books, the best of friends, he can hold intimate converse with the great and the good of every age and clime. Thus the delfer may not only have the self-respect of a gentleman, but be treated like one, in all intercourse with those superior in station. We are happy to know numbers of such men who, from their self-acquired and right-directed intelligence, realise in the capacity of servant a seemingly greater delight in the productions of the garden than the employers who pay for it all. So true is it, that the greatest activity in toil may ever be associated with the greatest pleasure and elevated enjoyment.

R. FISH.

SOME GARDENS WORTH SEEING.

SUFFOLK.

Name.	Proprietor.	Gardener.	Station.
Shrubland Park.....	Sir G. N. Broke, Bart.	Mr. Blair.....	Claydon.
Thornham Hall.....	Lord Henniker, M.P.....	Mr. Perkins.....	Mellis.
Brome Hall.....	Sir E. C. Kerrison, M.P.	Mr. Peacock.....	Diss.
Oakley Park.....	Sir E. C. Kerrison, M.P.....	Mr. Robens.....	Diss.
Havengham Hall..	Lord Huntingfield.....	Mr. Keep.....	Yoxford.
Redgrave Hall.....	Lord Clifton.....	Mr. Bontell.....	Mellis.

—JAMES CUBITT.

WORK FOR THE WEEK.

KITCHEN GARDEN.

As it is now a good time to start the first crop of Asparagus, Rhubarb, and Sea-kale, we trust that a few remarks on the forcing of these things may not be unacceptable to persons of small experience. The old plan of forcing Sea-kale is a most expensive and unsatisfactory mode; expensive on account of the breakage of pots and the loss of labour, and unsatisfactory on account of the want of a more perfect control over the whole proceeding. The best as well as the most economical plan is to take up the roots and force them in a body together after the manner of Asparagus. To accomplish this, it is, of course, necessary to grow strong roots in the kitchen garden for this special purpose. We say strong, for no mode of forcing can produce good Sea-kale unless the roots be strong to begin with. Such roots being available, they may be forced in any structure which will exclude light and the severity of the weather. They can be forced in frames with a double mat nailed down over the glass. They can also be grown under a mere wooden box, but the general practice is to force them in the Mushroom-house. A sunken pit is also useful, and this should be 2½ feet in depth, 18 inches for the fermenting matter, and 1 foot or nearly so for the crowns to rise and for any opaque covering considered necessary. The strongest fermenting matter to be placed 18 inches below the crowns, and the roots upon it, merely covering the hot manure with old leaves. The crowns to be set thereon as thickly as they can stand and filled up between with light soil, leaf mould, or old tan. In a couple of days, if the heat is found to be too strong, it can easily be reduced by the application of a little cold water. Rhubarb is forced successfully in a similar way. The roots, however, may be placed in large pots and set on flues or other warm surfaces. Asparagus requires the same treatment as to bottom heat as Sea-kale, with this difference in top management, that whereas Sea-kale cannot be kept too dark, Asparagus should have all the light this dull season affords, and abundance of air when the weather is mild in order to produce colour, without which there can be but

little flavour. Asparagus to have 4 inches in depth of soil over the crowns. The occupation of the ground by crops suitable as food for a variety of insects in the course of a series of years, brings a numerous collection of such depredators into a garden. The application of methods for their extirpation often taxes the ingenuity of a gardener to a considerable extent. The analogy existing between insect and vegetable life restricts the choice of means, for the substance which may be provided for the destruction of one may injuriously affect the health of the other, hence the necessity of caution in the use of materials. There is, however, one substance not open to any objection which may now be used with advantage on land from which the crops have been removed—viz., lime. Ground cropped the preceding season with Carrots, Parsnips, and Potatoes, and found, as is frequently the case at this time, infested with grubs, &c., should have a good dressing of lime dug in, or, if that cannot be afforded, the soil should be turned up in ridges for the winter. Artichokes (*Globe*), to be thought of for protection. Lettuces, examine the young plants frequently, and dust with lime or soot to check the devastation of slugs.

FLOWER GARDEN.

Now, as the leaves have all fallen from the deciduous trees, there should be a general clearing-up. The leaves and sweepings of the walks to be laid about the shrubs in the shrubbery, and to prevent them from blowing about they should be slightly covered with soil. This mode of proceeding will be much better for the shrubs than digging amongst them and destroying their roots.

FRUIT GARDEN.

Proceed with the planting of fruit trees in open weather, and if the soil is old let each tree have a good portion of new soil about its roots. Pruning and nailing all sorts of wall trees except Peaches, Nectarines, and Apricots, should now be vigorously prosecuted. Leave nothing for the spring which can be done now, every day gained now will give greater liberty for spring operations.

STOVE.

A cautious application of fire heat must still be observed here. Keep the temperature rather lower than otherwise for fear of exciting a premature growth. Cleanliness and a judicious use of the watering-pot should be strictly attended to. A small portion of air may be advantageously admitted on fine days, and will greatly assist in purifying the atmosphere of the house. Many stove plants with large fleshy roots, such as the different varieties of *Ipomœas*, should now be allowed to become nearly or quite dry.

GREENHOUSE AND CONSERVATORY.

Attend to the removal of Chrysanthemums and all other plants as they turn shabby. Some of the early Camellias will soon be ready to take their places. Occasional fires will be useful during dull, damp, or rainy weather, taking care not to raise the thermometer unnecessarily high. Every endeavour should now be made to keep the conservatory as gay as possible. In mixed greenhouses see that the young stock of *Heliotropes*, *Geraniums*, *Cyclamens*, Chinese Primroses, and other flowers grown especially for winter have nice light situations and regular attention as regards watering. In addition to keeping the conservatory gay with blooming plants, let the arrangement of the house be occasionally changed by grouping the plants somewhat differently, and adding a few striking ones, such as Orange trees, *Araucarias*, and any other plants of beautiful foliage, with here and there plumes of the Pampas Grass, &c., for effect.

FORCING-PIT.

This structure to be kept fully occupied with all the different plants usually employed in forcing for the decoration of the conservatory or drawing-room. In successfully forcing many plants the application of bottom heat will be found indispensable; a well-constructed tank is, therefore, a necessary adjunct in this department.

PITS AND FRAMES.

Keep the stock in these structures well ventilated, and the surface soil of the pots frequently stirred. Dust with sulphur Verbenas and other plants attacked with mildew. Be particular in keeping the interior as dry as circumstances will permit. Prevent drip as soon as perceived.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

In all departments might say, "Another of the same, much the same as last week." Obtained a little stubble for packing up the tops of Celery. We noticed the mode of blanching by means of allowing the plants to grow through drain-pipes set upright, at page 410. It so happens that we practised a similar mode many years ago, and it does well for early Celery when the receptacle is well filled; but then the mischief is in proportion to the porousness of the drain-tiles; they were liable to let the Celery freeze in frosty weather. So far as mere blanching is concerned, we have had large early heads pretty well blanched by merely tying the plants close together; but in that case, too, if nothing else is done, the Celery when blanched is apt to suffer from frost. Packed a little litter round the stools of Globe Artichokes, after placing a mound round them of dry leaf mould, and burnt clay and rubbish. Went over some vegetable quarters, and pulled off the yellow leaves from Brussels Sprouts. We attribute more than ordinary of these yellow leaves to the heat and drought of the summer. Gave plenty of air to our Asparagus in a frame, as with mild heat it has come in sooner than we expected, but it is also good and very useful. Put in some more Sea-kale and Rhubarb, to give a good supply about Christmas time. Find that some Cauliflowers that were put into a thatched shed have been much improved in appearance, the heads being particularly white. Earthed-up a little bit more of a Mushroom-bed, and kept the house a little warmer, about 65°, or a degree or two more for a few days, as we wanted a good many large and small for some days; will then let the atmospheric temperature fall to 55° as the average. Had most of the rubbish from flower-beds, Pea haulm, Scarlet Runner haulm, thrown up into a heap along with some leaves and litter, and it will be most valuable for forcing, and helping on many things. When we do not use such materials in this way, we use them for a bottom, and for throwing heat into rubbish-heaps—those mixtures of everything in a garden, soil from pots, refuse from vegetables, weeds, &c. This heating is a capital thing for setting all seeds germinating, and then getting killed for want of air to breathe in. Took also a little more turf from the roadside, and it is stacked up like heaps of miser's gold. When we can follow our choice we like these heaps to stand for a twelvemonth, and to be pretty well aired, and then cut down and used without any of the frequent choppings and turnings which many people recommend, as the more chopping and turning the greater the waste of fibre. We have made these heaps of turf of different sizes, but we now make them as follows:—Set off a yard in width at bottom, build that widening so that at 3½ feet in height the heap will be 3½ feet wide, then take in and finish with a span-roof 18 inches to the apex. In building, when about 15 inches from the bottom, place small circular drain-tiles from end to end in two rows, with a little space between them to let air circulate freely. Do the same about 3 feet in height, and one row in the ridge. These mellow and sweeten the soil without greatly injuring or wasting the fibre. The top is then thatched with turf, grass side upwards, and a few wooden pins driven in to keep the turves in their place. As soon as the turf takes hold no rain will penetrate; and so dry as these heaps kept, that when using them a little water is often wanted to make them mellow enough for potting. The drier the turf is put up the sooner will the soil be sweet and fit for use.

FRUIT GARDEN.

Much the same as in preceding weeks. Made up two slight hotbeds with leaves, &c., and filled the two frames of two lights each with Strawberry plants, having previously removed all the yellow and a few of the larger leaves; and, having picked off with a pointed stick a little of the surface soil, and made sure there were no worms in the pots, top-surfaced with rich compost pressed firm, and set the pots in the bed, allowing them to sink in the leaves an inch or so. This will just move them gradually, and render them apt to go into places where we apply to them a little more than merely keeping frost out. We do not plunge these pots, sometimes at this season even no great depth of tree leaves will heat violently, and nothing injure Straw-

as left standing on the top of the leaves the heat must be watched, and then if very mild, only from 60° to 65°, the pots may be partly plunged. In this respect, also, care is necessary so far as these early plants are concerned; and if the pots are plunged at all, or even partially so, it is a good plan to have the bottom of the pots resting on a hard substance—as a deal board, for whatever at this early period has a tendency to make the roots run through the bottom of the pots, has also a tendency to give you a fine crop of foliage with but little fruit. The allowing the roots to extend after the fruit is set is quite a different affair. Meanwhile we would say to all who cannot undertake the trouble of watching these mild hotbeds, that they will do better if they put their plants into a cold frame or pit, or upon any shelves in their houses that may be vacant. Suitably attended to there, they will move gradually as the heat is increased. Looked over fruit-room, and find that Pears are not keeping so well as Apples. Many boys and labourers are fond of a mellow Pear, when they would be too mealy for the parlour table.

ORNAMENTAL DEPARTMENT.

Proceeded with cleaning up pleasure grounds, rolling walks, potting and fresh-regulating plants in the houses, and finished a little stove-house, the repairing of which has been in hand for some time. Our Fig-house and this little stove-house are in the same little low range, having previously been Pine-pits. The walls and floor were sunk below the ground level 3 feet. The fruit wall outside was 1 foot higher, and the back wall 4 feet. The house was 14 feet wide inside measure. There was a short hip at the back, of glass, which made the highest point of the roof 8½ feet from the floor. The house was heated by hot water, two pipes a yard from back wall, and three pipes 1 foot from front wall. Over these pipes we had a platform of slabs and a path in the middle. The beds were rather wide to be nicely managed, and when a few people went in they could not well get out again. The wall-plates, &c. being decayed, we were allowed to make a little alteration provided it did not cost much. On that account we were afraid to meddle with the old heating-pipes in case they should want a good deal of tinkering at our hands. We, therefore, after clearing and painting, left them as they were. Air was previously given by moving the sashes of the roof. In putting fresh wall-plates we raised all the walls round from 18 to 24 inches, raising the roof, after the glass was off, as we did so. This gave headway enough to have a pathway all round and a table in the centre, with a platform at back, and a shelf at the ends and front. The walk is about 28 inches wide, the front and end platforms 18 inches wide, the back platform 3½ feet wide, and the central platform 4 feet wide. The front shelf, end shelves, and back platform are supported by a wall all round 15 inches in height, and then by little pillars in front of the pipes. That will leave room all the way for a little bed near the pipes for small Ferns and Lycopods, which will be allowed to hang over this dwarf wall as they grow. Wires extended on the sides from pillar to pillar will also be a good support for creepers to run along that like both heat and shade, and that have fine foliage, as the Cissus discolor. The centre platform is supported on stout oak posts standing on a raised row of bricks laid in cement, to keep the posts from the damp of the floor. The space underneath has been drained, and, after a lot of brickbats, has been covered with heath soil and loam, and that too will be planted, or rather is planted, with Lycopods and Ferns. The oak posts will not be painted until next summer, and then we will sand them to resemble stone, and will do the same with skirting-boards, brickwork, &c. The part of the posts out of sight was well coated with pitch. The platforms are laid across oak bearers similarly pitched. The platforms themselves are stout boards of the necessary width well pitched on both sides, just put close together, and then all covered with clean little stones, or shingle procured by washing road drift, and keeping all these of one uniform size or nearly so. On this the plants will stand. We forgot to say that in raising the wall we left openings for ventilation back and front, which can be easily opened and regulated without any great mechanical contrivance. The ventilators are small boards hung on screws to act as a pivot-joint. We can now go round the little place and see and examine every plant in it, and do a little labour, but the pleasure

well repays it. We might not have thought of doing so but for the necessity of repairs. We have also left an opening, so that we can drill a hole for hot-water pipes in the centre if ever they should be necessary. Baskets will be suspended over the pathways, and if not, we could have a broad shelf there. From floor to glass all may thus be occupied.

This may be interesting to some correspondents who are making inquiries as to arrangements. If one good turn deserves another, then we should like to propose a few questions as to the pitch. The sort we used was in lumps, such as is employed by undertakers; but there is such a collection of materials very much alike under the name of bitumen, asphalt, pitch, &c., that we really do not know which is the particular sort, or what would be best for the purpose of keeping out water and yet drying at once and giving out no scent a few minutes afterwards. When used very hot and, of course, melted, we found it would not part freely from the brush unless there were a little grease mixed with it; but if we happened to put in too much it did not dry quickly on the boards. And, once more, Does any one know experimentally how such pitch-painting would stand on wood out of doors under the variations of our climate—heats and colds, &c., and what would be the cost of good pitch at wholesale prices? We cannot say that we fancy painting even rough fences with tar, and we rather think it sometimes helps to rot the wood it is intended to preserve. But if such mixtures are to be ground up and sold for white lead, it is high time something more durable could be had. We know that some of the very best paint, at least paid for as such, is apt to rub off like chalk in less than a twelve-month.—E. F.

COVENT GARDEN MARKET.—Nov. 28.

The market continues well supplied with produce of all kinds, and quotations are unaltered. Of foreign Grapes and Melons there is a plentiful supply. Home-grown Apples and Pears consist of the same kinds as named in previous reports. From France there are some magnificent examples of Reinette de Canada, Poome d'Apl, and Calville Blanche or White Calville; and in Pears of Uvedale's St. Germain of immense size, Hon Morceau, Easter Beurré, and others. Sea-kale is coming in in greater quantity; but the demand having increased, former prices are maintained.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	4	0	Mulberries quart	0	0	0	0
Priolets doz.	0	0	0	0	Oranges 100	4	0	10	0
Pigs doz.	0	0	0	0	Pears bush.	7	0	10	0
Liberts & Nuts 100 lbs.	55	0	75	0	dessert ½ sieve	2	6	5	0
Irishes, Hamburgs, lb.	1	6	5	0	Pine Apples lb.	3	0	6	0
Hambro's, Foreign	0	9	1	6	Pineapples ½ sieve	0	0	0	0
Muscats doz.	3	6	0	0	Pomegranates each	0	3	6	0
emons 100	6	0	10	0	Quinces doz.	1	0	2	0
felons each	1	0	2	6	Walnuts bush.	14	6	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus bundle	6	0	10	0	Leeks bunch	0	3	0	0
Beans, Broad bush.	0	0	0	0	Lettuce score	1	0	2	0
Kidney ½ sieve	0	0	0	0	Mushrooms pottle	1	0	2	0
eat, red doz.	1	0	1	6	Must. & Cress, punnet	0	2	0	0
roccoli bundle	0	9	2	0	Onions ½ bushel	2	0	4	0
abbage doz.	0	9	1	3	pickling quart	0	6	0	8
apeicums 180	1	3	2	0	Paraleys bunch	0	3	0	4
arrots bunch	0	6	0	0	Parasnips doz.	0	6	0	9
auliflower doz.	2	6	4	0	Peas bush.	0	0	0	0
clery bundle	1	6	2	0	Potatoes sack	5	0	8	0
ucumbers doz.	6	0	12	0	Radishes doz. bunches	1	6	2	6
ndive score	1	3	2	6	Rhubarb bundle	0	0	0	0
ennel bunch	0	3	0	0	Savoy per doz.	0	9	1	6
arlic and Shallots, lb.	0	8	0	0	Sea-kale basket	2	0	3	0
ourds & Pumpk., each	0	0	0	0	Spinach sieve	1	6	2	0
erbs bunch	0	3	0	0	Tomatoes ½ sieve	0	0	0	0
orseradiash ... bundle	1	6	4	0	Turnips bunch	0	3	0	0

TO CORRESPONDENTS.

* We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 162, Fleet Street, London, E.C.

B.—Many questions must remain unanswered until next week.

HEATING (J. Mussett).—Such a notice is merely an advertisement, and if inserted it we could not refuse insertion to many others.

SOWING CYNARA MARITIMA (E. D. G. C.).—Sow in the first week of February in a temperature of 65°. One part loam, one part leaf mould, and as much sand as will make the whole sparkle will suit it very well. It is a plant easily raised from seed. It, however, does not acquire its silvery hue the first year from seed, and we always sow in July or August and preserve it over the winter. We are puzzled to know how you managed to get a temperature so low as 44° last August. The cuttings could not succeed well in such a temperature. We find damp the greatest obstacle in striking autumn cuttings, and that the weak wiry side shoots always strike the most readily.

COVERING FOR PIPES IN CUCUMBER-HOUSE (J. K.).—The oak boards will answer, but slate will be better, inasmuch as it lasts so long, allows the heat to pass more freely, and there is no risk of breeding fungi in the soil, as is the case when the wood begins to decay. Heart of oak, however, will last a long time, but slate we consider the best, and we have used it with great success.

PINE APPLES DECAYING (Idem).—As soon as your Pines show the least signs of colouring at the base of the fruit, keep the soil dry and also the atmosphere of the house or pit. The Antigua is not a good keeper under any circumstances, and therefore it should be cut before it is dead ripe and be used immediately. Were you to grow Smooth Cayennes and Black Jamaicas for late autumn and winter work, you would have no difficulty of the sort with them. They are the two best winter Pines.

LOBELIA PAXTONII (L. E.).—The merit of Lobelia Paxtonii must be determined by each individual's taste. We do not like it so well as we do Lobelia speciosa, but we consider it a valuable acquisition. It is very like an old variety named bicolor. In a mixed border it will look well, and so would a row of speciosa in front and a row of Paxtonii behind it. It is a different habit and colour from gracilis—gracilis is light blue, Paxtonii is lightish blue and white, the white rather preponderating. We decidedly recommend you to propagate it, and yet not to discard the speciosa. They are both good for definite purposes.

SPRUCE FIRS FOR LIGHT LOAMY SOIL (G. B.).—Abies excelsa (Norway Spruce), Abies Douglasii, and Picea balsamea (Balm of Gilead Fir) we think would answer your purpose. Pinus austriaca and the Scotch Fir would also suit you.

NATURAL HEIGHT OF CUPRESSUS LAWSONIANA (Idem).—It is a native of California, where it attains a height of 100 feet; but we cannot say to what height it will grow in this country. It is one of the handsomest of the Conifers.

TURNING SHEEP AMONGST YEW AND OTHER TREES (Idem).—Yews poison horses and cows, and it is highly probable that, if the sheep could get at the branches and leaves, they would be poisoned also. We advise you to have them fenced off, or to put some temporary netting or permanent iron-wire fencing round the trees and shrubs.

ADRESTER ALPHEUS CULTURE (George Sim).—This is not half such a "miffy" plant as is represented. It grows freely in sandy peat one half, light turfy loam and leaf mould the other half, with a liberal admixture of small pieces of charcoal and silver sand. A rather moist atmosphere, without saturation, is requisite, and moisture standing on the leaves must be avoided. Shade from very bright sun, but give air and light the same as to any other description of stove plant with fine foliage. The heat of an ordinary stove suits it well. Of the plants you name Alocaasia scabrana and A. albo-violacea are the newest; the next is A. Lowii. Show the best grown—the Judges will not pass over good cultivation for the sake of novelty; at least, cultivation should be the test of merit.

UNFRUITFUL PLUMS (W. W.).—The best plan for you to adopt is to dig out a trench round the extremity of the roots and carefully remove all the old soil, preserving every root that can possibly be retained. Pare off with a knife every appearance of a sucker, and replant the roots in fresh strong loam with a little rotten dung mixed with it. Plums do not do well in a light gravelly soil, and if yours is of that quality try and procure some of a more strong and adhesive character. The roots had better not be taken up any nearer to the stems of the trees than up to the pavement, as the trees are old. You may take up the pavement and remove the soil down to the roots underneath it, and close up to the wall, and lay in a top-dressing of the soil we have already recommended; but do not on any account cut back the roots within the limits of the small space between the pavement and the wall. There is a list of the other garden manuals sold at our office on the cover of "Fruit Gardening for the Many."

GRAPE DECAYING (A Six-years Subscriber).—We think your Grapes are suffering from mould. The berries are not sufficiently thinned for hanging, and the footstalks consequently mould from want of air. The berries should be thinned so that they do not touch each other. The bunches should be daily examined to see that no mouldy berry exists, and when one is seen it should be taken out immediately, otherwise the disease soon affects the other berries, and the bunch is rotten in an incredibly short time. Your border would be better if it were covered with wooden shutters to keep the roots dry.

CELERY DISEASED (Idem).—The Celery is attacked by the fly so common now. Sprinkling the leaves with soot prior to the leaves being attacked with the pest is a never-failing preventive. Strew soot on the leaves now, continuing to pick off those most affected and burn them as you are doing. Be in time with the soot next year, for prevention is always better than cure.

PLANTING FLOWER-BEDS (New Forest).—We consider the plan well adapted for planting on the balancing principle; but we cannot swerve from our fixed rule. Send us your proposed planting, and we will say if any error is apparent to us.

GREENHOUSE FERNS (M.).—We would add the following to those you have already:—Adiantum capillus-Veneris, A. pedatum, A. pubescens, Antigramma urophylla, Blechnum triangulare, Cheilanthes micromera, Cystopteris tenuis, Drynaria pustulata, Hymenophyllum dilatatum, Lomaria capensis, Nothochloa vestitum, Platyloma atropurpurea, Polystichum capense, Pteris serrulata, Trichomanes radicans, in a moist shady place.

HOLLYHOCK AND DAHLIA FLOWERS CHANGING COLOUR (An Old Lady).—We shall be much obliged by your informing us of the result from changing the soil; but recommend you to grow some in the same soil as they now grow in—this will be a test. We think growing Dahlias for a series of years in the same soil might render them less vigorous, but would not change all the colours to white.

SELECT PELARGONIUMS (C. J. M.).—Twenty-four fine-flowering *Pelargoniums*: Colossus, Royal Albert, Rosy Bloomer, Censor, Improvement, Ariel, Celeste, Empress Eugénie, Fairest of the Fair, Lady Taunton, Lord Clyde, Mrs. Hoyle, Norma, Princesa, Roseum, Sir Colin Campbell, The Belle, Sunset, Bacchus, Lady Canning, Agamemnon, Merrimac, Viola, Leviathan. *Six Spotted*: Lancener, Monitor, Conspicuum, Sanspareil, Mr. Hoyle, Peacock. *Six Fancies*: Ellen Beck, Acme, Arabella Goddard, Cloth of Silver, Madame Sainton Dolby, Modestum.

BEANS.—W. H. wishes to have any approximation to a statistical account of the acreage planted with Beans in England each year, or in the United Kingdom; also which are the principal Bean-producing districts, and whether they are grown to any extent in foreign countries, and, if so, what countries? We shall be obliged by a reply to these queries.

SELECT CHRYSANTHEMUMS (P. A.).—Twelve best *Chrysanthemums*, large-flowered: Her Majesty, Duchess of Buckingham, Jardin des Plantes, Beverley, Lord Palmerston, Talbot, Queen of England, Dr. Ross, Plutus, General Slade, Antonelli, and Cleopatra. *Six Pompones*: Mrs. Dix, Danae, Julie Engbach, Lucinda, Duruflet, and Julie Lagravère.

ERECTION OF A GREENHOUSE (Economy).—The cost always varies too much with locality and circumstances for us to give an estimate without almost a certainty of misleading. For seven postage stamps you may have from our office "Greenhouses for the Many," which gives full particulars and illustrations.

NEW ZEALAND FLAX CULTURE (N.).—This plant (*Phormium tenax*) has been found hardy as far north as Inverness-shire. It bears the climate of the southern counties of England, and grows freely in the moist climate of Ireland. It will, therefore, no doubt prove hardy with you in the south-west in a sheltered situation. The plant is easily propagated by division of the root. The divisions may be taken off in April and planted at once in loamy soil in their final quarters. The seeds should be sown in March in rather strong loam, scattering them thinly over the surface, and covering with a thickness of soil equal to that of the seed. Place the pot or pan in a Cucumber-frame or any place with a nice gentle heat. Keep duly supplied with water, and when fairly up gradually harden-off and place in a cold frame. Prick them out in a cold frame when sufficiently large to handle, making the soil moderately rich by adding some leaf mould or well-rotted manure to it. Keep rather close until the plants become established, then admit all the air and light possible, and give copious supplies of water. The plants should have the lights put over them in severe weather, some bracken or straw being placed on the lights in long-continued frosts. Plant out in the April following. They require a moist soil and climate, and will no doubt do well on the margin of your lake. We should advise you to try an established plant or two first, and see what effect the climate and soil have upon them before you risk a number of plants.

ASPLENIUM VIVIPARUM CULTURE (B. B.).—We grow this in a moist stove fernery, and have no necessity to employ a bell-glass. It does well in a temperature of 55° by night and 65° by day in winter, and one of 65° by night and 75° to 85° by day in summer. It has fronds much resembling Fennel, and bears a quantity of little plants on its fronds as they become mature. It usually grows about 1 foot high, and does well in a six-inch pot if a moderate-sized plant, a nine-inch one being sufficient for the largest plant. Cocos dust is a good material for growing it in, and it requires the same amount of moisture as any other stove Fern, the Filmy-Ferns excepted.

TUNNINGHAM MUSCAT GRAPE (Old Subscriber, Nottingham).—This is a very fine variety of the Muscat of Alexandria, and you can procure it through any respectable nurseryman; but should you have any difficulty, write to Mr. R. Parker, nurseryman, Tooting, near London, and you will be sure to obtain it.

DRAECNA HELICONTIOLIA AND D. SIAMENSIS (W. T. T.).—These cannot be successfully cultivated in a greenhouse where the temperature falls below 50° at night in winter. They do moderately well in a warm greenhouse in which the temperature rarely falls to 45° at night; but a stove with a temperature in winter of 55° at night and 65° by day, and in summer of from 60° to 85° is more suited to their requirements. We should be only deceiving you were we to say that they would thrive in a cool greenhouse. You may keep them dry during the winter, when they will bear a lower temperature, and probably they might be wintered safely in your cool greenhouse. Anthurium acule is not worth growing by those whose space is limited. It is well enough for botanical collections; but, as a fine-foliated plant or ornamental-leaved—which are all the charms it possesses, or even are claimed for it—we think it is one of many that could well be spared. We know of no other attractions beyond those already seen by you.

CLOTH OF GOLD ROSE NOT FLOWERING (S. R. Drake).—This Rose, at the very best, is a shy bloomer. A southern aspect is more suitable for it than an eastern one, as the sun will not be long enough upon it to sufficiently ripen the buds; therefore they come blind or make wood only. We should advise you to thin out the shoots and admit sun, light, and air to them by not nailing in the shoots nearer than 1 foot apart. If you could conveniently dig out a trench about 4 feet from the stem and down to the lowest roots, which you would cut and then fill in the trench with rather poor soil, we think it would not then grow so rampantly as it does, and this probably might be the means of causing the wood to ripen better and afford more flowers the season after next. We thoroughly understand what you mean by blind shoots.

NAMES OF FRUIT (W. H. C.).—Your Pears are—1, Beurré Diel; 2, Chaudmontel; 3, Vicar of Winkfield; 4, Passe Colmar; 5, Beurré de Rance; 6, quite rotten; 7, unknown. (W. Gill).—It is not Doyenné d'Ete, but Beurré Rennet. (A Subscriber from Wales).—Your Pear is Red Doyenné. You may have in addition Josephine de Malines, Winter Nelis, Jean de Witte, and Bergamotte Esperen.

NAMES OF PLANTS.—Some of our correspondents are in the habit of sending small fragments of plants for us to name. This requires from us much a great expenditure of time that we are compelled to say that we cannot attempt to name any plant unless the specimen is perfect in leaves and flowers. (Jarman).—It is not a Fern, but *Pilea muscosa*, the Pistol or Artillery Plant, belonging to the natural order Urticaceæ. (W. H. M.).—*Hymenophyllum tunbridgense*; 2, *H. unilaterale*. (M. A. S.).—*Cynopteris fragilis*. (W. H. Mayne).—Nos. 1, 2, and 3, *Trichomanes radicans* in different conditions; 4, *Adiantum cuneatum*, certainly. (A. T.).—1, *Litobrochia aurita*; 2, *Pteris arguta*; 3, crushed, apparently *Tetratheca ricciofolia*; 4, *Monochaetum confertum*. (T. P.).—Your Ferns are—1, *Pteris caudata*; 2, *Pteris caudata*; 3, *Pteris caudata*; 4, *Pteris caudata*.

4, *Pteris cretica*; 5, *Pteris hastata*; 6, *Pteris serrulata*. (B. H. W.).—1, *Pteris serrulata*; 2, *Pteris tremula*; 3, *Selaginella pubescens*; 4, *Pteris hastata macrophylla*; 5, *Athyrium filix-femina*; 6, *Torulia asiatica*. We do not go beyond this limit. (S. S. Woodlands).—*Pteris serrulata*. (A Scotchman).—*Rhynchospermum jasmoides*. (T. C. S. Tynes).—*Hymenophyllum tunbridgense*. (A Subscriber to the H. J.).—Your bulb is *Sternbergia lutea*, one of the *Amaryllidaceæ*. It is a native of the South of Europe, but we do not know whether it is found in Palestine. It has been cultivated in our gardens for more than two centuries.

POULTRY, BEE, and HOUSEHOLD CHRONICLE

COMMON SENSE APPLIED TO EXHIBITING AND SELLING.

At page 401, "EGOMET" touches on various matters in answer to "AN EXHIBITOR IN A SMALL WAY." In answer to the same exhibitor, I would reply that "EGOMET's" observations are well worthy of attention. I, too, am an exhibitor in a small way, and understand how difficult it is for owners, especially when not present at the shows, to conceive that birds, which by constant scanning they have considered the "pinks of perfection," remain unnoticed. The fact is, that Judges, as a rule, see more impartially than we do, and as generally they judge ignorant of ownership, we ought to give credit for honesty in carrying out the very difficult task of trying to please everybody. It is impossible perhaps, that such practised eyes as Mr. Hewitt's or Mr. Bailly's can frequently examine closely the same pen and not occasionally recognise the proprietor; but because the well-known pen obtains the blue ribbon, we have no right to blame the Judges. Occasional mistakes there must be: sometimes we may get the benefit, as a poultry friend lately told me I had; sometimes we may get the loss, as I have also done:—these are matters that the greatest care, the most precise rules, the strictest judging by points, can never wholly avert.

Though less fortunate than I had hoped to be at the Crystal Palace, I might perhaps have been tempted to Birmingham, but for the peculiar method of entering and the hints about the small size of the pens. I know I have seen many valuable birds considerably damaged by this, and it seems a pity that "the mother of shows" should act so unwisely in this particular. As regards Manchester, I think a greater point against the Show than the days on which it is held is the character of the prize list; but on this point, after Birmingham and Manchester, I may with your permission say more, as I hope to analyse those Shows as to entries, as I have done the London Shows. My only experience of a Show on the same principle was Sheffield; there the classes filled very badly, and to many, myself included, bare honour was all that was gained, as the prizes have never appeared.

Let "EXHIBITOR IN A SMALL WAY" take the Crystal Palace catalogue and prize list; he will see many exhibitors of pens from one to six in number, amongst the prizetakers, whilst he will also see many entering largely, yet not achieving success in proportion. "ONE WHO DOES NOT MIND THE FORMALITY OF AN ADVERTISEMENT," also gives him advice with which my experience quite agrees. Get a name for a breed, and even without an advertisement he will sell birds—at least I have done so largely this year, purely, as I presume, on the strength of my success in exhibiting, for I have never advertised. I think it is time now, especially as some little time ago I saw an advertisement of birds as from my stock by a former purchaser. This leads me on to "CONSTANT READER;" and, I may say that in each case of application I have sent prices of birds, but requested post-office order first. All except one did so, and several expressed their satisfaction, nor have I ever had a complaint. After you have supplied a few to their satisfaction, you have them as persons to whom you may refer others. "CONSTANT READER" may, perhaps, in future, send his post-office order not to be payable for ten days. I have trespassed so largely on your space that I must leave my remarks on "BRAHMA POOTRA" till after the two great Shows to which I have alluded.—Y. B. A. Z.

CREVE CŒUR FOWLS.

I HAVE just read your account of the Crève Cœur fowl, and, I am pleased to say, I can endorse M. Jacques's good opinion of this bird as far as the prejudiced as to its

success, thinking that a bird coming from a warmer climate to one of a colder and more changeable character would not succeed, but hearing of their extraordinary merits in egg-producing I was induced to try them. I consequently wrote to a Parisian dealer for three pullets and a cock. They arrived, but in very bad condition through their long journey, misdirection, and cold weather. Their eyes and heads were much swollen, and they became totally blind and discharged at their nostrils, which gave me cause to regret my bargain, and seek information as to the best cure.

Well, after getting them over this their first trouble, I had my fowl-house removed to a more sheltered spot and made warmer; I took particular care in the feeding, and they soon commenced laying, although they were hens and not pullets as described by my French friend. It was now November, and every egg was valued. They continued laying large eggs, averaging $2\frac{1}{2}$ to 3 ozs. each, and several were laid weighing $3\frac{1}{2}$ ozs. They each laid about five or six eggs in the seven days, and continued till New-year's-day, when two of them stopped, the other continuing till a fortnight afterwards. I then was loud in my praises of this fowl, and recommended it to all my friends in preference to all others. They have a double merit in being extraordinary layers, and first-class table fowls. They are superior to the Spanish as layers in winter, are much harder when once acclimatised, easy to rear, and fledge quickly. Their superiority to the Dorking is that they are better layers, produce larger eggs, stand confinement, and the chickens are harder and more easily reared. They are equal to Dorkings also as table fowls. I was not able to rear many early chickens, in consequence of the difficulty of procuring sitting hens, but I had my first batch out in the middle of April, and was very successful through the season, scarcely losing any. I reared about fifty chickens, but I am sorry to say, the majority were cocks. This gave me a chance of trying their merits as table fowls. I fed them well, and gave them every opportunity of foraging, which they perform assiduously, and was pleased to see their speedy development. I commenced killing some of the earliest hatched at about twelve or fourteen weeks old; they then weighed about 4 lbs. after being put up a week or so to fatten, but at five months we killed them at 7 lbs. On Michaelmas day we sat down to a splendid bird, weighing when trussed $8\frac{1}{2}$ lbs., it had been up about twelve days to fatten.

The flesh is beautifully white, very juicy, and short-grained. I did not kill any pullets, but weighed them very frequently at 5 and 7 lbs. They commenced laying, some at five months and others at six, and are still continuing to give abundance of eggs. I had a good opportunity of judging of the hardness of the chickens, as, my place being pulled up for drainage, the engine pumping water all day kept the yard constantly wet, but this did not seem to affect them, whereas, if they had been Spanish, Dorking, Hamburg, or other varieties, they would not have survived.

I think it will be a great pity if these birds are to be made a bird of feather against size and other more sterling qualities. I trust you will pardon this lengthy account, but I think if all our amateurs would make known their failures and successes through the pages of your Journal, which you so kindly throw open to discussion, the fancy would gain a vast amount of information derived from experience and observation.—W. G.

BIRMINGHAM POULTRY SHOW.

SUBJOINED is a list of the principal prizetakers at this important Exhibition, which was opened to the public yesterday, and will continue open till Thursday the 3rd inst. A list of the commended pens, together with a full report, will be given in our next issue.

DORKING (Coloured).—First, Capt. W. Hornby, R.N., Knowsley Cottage, Prescott. Second, Right Hon. Viscountess Homesdale, Linton Park, Staplehurst, Kent. Third, J. D. Hewson, M.D., Coton Hill, Stafford. Fourth, J. Drewry, Newton Mount, Burton-upon-Trent. Fifth, Mrs. F. Blair, Balthayock, Inchmartine, Inchture, N.B. (Silver Grey). **Chickens.**—First, Capt. W. Hornby, R.N. Second, A. Potts, Hooke Hall, Chester. Third, Rt. Hon. Viscountess Homesdale. Fourth, Lady Sophia Des Vaux, Drakelowe Hall, Burton-upon-Trent. 5th, Mrs. F. Blair.

DORKING HENS.—First, W. Copple, Prescott. Second and Third, Right Hon. Viscountess Homesdale, Linton Park, Kent. **Pullets.**—First and Third, W. Dobby, Rotherfield, Tunbridge Wells (Coloured). Second, Mrs. F. Blair.

DORKINGS (White).—First, Mrs. H. Fookes, Whitechurch, Bismford. Second, H. Lingwood, Needham Market, Suffolk. **Chickens.**—First, H. Lingwood. Second, C. Pease, Southend, Darlington.

SPANISH.—First, H. Lane, Milk Street, Bristol. Second, R. Teebay, Fulwood, near Preston, Lancashire. Third, W. Cannan, Adolphus Works, Bradford, Yorkshire. Fourth, Right Hon. Viscountess Holmesdale, Linton Park, Kent. **Chickens.**—First, H. Lane. Second, J. R. Rodbard, Aldwick Court, Writington, near Bristol. Third, R. Teebay, Fulwood, near Preston. Fourth, Right Hon. Viscountess Holmesdale.

SPANISH HENS.—First, J. Biggar, Marefair, Northampton. Second, R. Teebay, Fulwood, near Preston, Lancashire. **Pullets.**—First, H. Lane, Milk Street, Bristol. Second, J. K. Fowler, Prebendal Farm, Aylesbury.

COCHIN-CHINA (Cinnamon and Buff).—First and Second, Capt. Heaton, Lower Broughton, Manchester. Third, G. Fell, Warrington. **Chickens.**—First, Cup, and Second, Capt. Heaton. Third, T. Boucher, Bull Street, Birmingham.

COCHIN-CHINA HENS (Cinnamon and Buff).—First, E. Smith, Middleton, near Manchester. Second, H. Bates, Harborne Heath Cottage, Birmingham. **Pullets.**—First, C. T. Bishop, Lenton, Nottingham. Second, Capt. Heaton, Lower Broughton, Manchester.

COCHIN-CHINA (Brown and Partridge-feathered).—First, T. Stretch, Ormskirk. Second, Mrs. White, Broomhall Park, Sheffield. Third, Mr. Cartwright, Oswestry. **Chickens.**—First, E. Tudman, Ash Grove, Whitchurch, Shropshire. Second, T. Stretch, Ormskirk. Third, J. K. Fowler, Prebendal Farm, Aylesbury.

COCHIN-CHINA HENS (Brown and Partridge-feathered).—First, Captain Heaton, Lower Broughton, Manchester. Second, E. Tudman, Ash Grove, Whitchurch, Shropshire. **Chickens.**—First, — Cartwright, Oswestry. Second, Capt. Heaton.

COCHIN-CHINA (White).—First, R. Chase, Tindal Street, Balsall Heath, Birmingham. Second, W. Dawson, Hopton Mirfield, Yorkshire. **Chickens.**—First, G. Lamb, Compton, near Wolverhampton. Second, Master R. W. Chase, Balsall Heath, Birmingham.

BRABMA POOTRA.—First, Mrs. F. Blair, Balthayock, Inchmartine, Inchture, N.B. Second, R. Teebay, Fulwood, near Preston. **Chickens.**—First, Mrs. F. Blair. Second, Mrs. Rothery, Denbigh House, Haslemere, Surrey.

MALAY.—First, N. Sykes, jun., Globe Road, Mile End, London. Second, Master C. A. Ballance, Mount Terrace, Taunton. **Chickens.**—First and Second, N. Sykes, jun.

CHIVE-COVA.—First, Messrs. Harrison & Caton, Central Beach, Blackpool. Second, S. Waters, Woodbridge Road, Ipswich. **Chickens.**—First, Messrs. Harrison & Caton. Second, Hon. G. E. de Flahault, Tullyallen, Kincardine, on Forth by Stirling, N.B.

HAMBURGH (Black).—First, N. Shaw, Stainland, Halifax. Second, J. Royds, Bearshaw Clough, Middleton, near Manchester. **Chickens.**—First, J. Royds. Second, G. Lingard, jun., Snow Hill, Birmingham.

HAMBURGH (Golden-pencilled).—First, J. Neville, Haselour Hall, Tamworth. Second, H. Beldon, Gilstead, Bingley, Yorkshire. Third, J. Dixon, North Park, Clayton, Bradford. **Chickens.**—First, H. Beldon. Second, J. Munn, Shawclough, Newchurch, near Manchester. Third, W. Hargreaves, New Church Road, Bacup, near Manchester.

HAMBURGH (Silver-pencilled).—First, J. Keable, Thatcham, Newbury, Berkshire. Second, D. Harding, Middlewich, Cheshire. Third, Rt. Hon. Viscountess Homesdale, Linton Park. **Chickens.**—First, H. Marshall, Cotgrave, near Nottingham. Second, J. G. Sugden, Eastwood House, near Keighley. Third, C. M. Royds, Greenhill, Rochdale.

HAMBURGH HENS (Pencilled).—First, J. Munn, Shawclough, Newchurch, near Manchester. Second, H. Beldon, Gilstead, Bingley, Yorkshire. **Pullets.**—First, J. Munn. Second, J. Robinson, Vale House, Garstang.

HAMBURGH (Golden-spangled).—First, N. Marlor, Denton, near Manchester. Second, J. Robinson, Vale House, near Garstang. Third, S. H. Hyde, Taunton Hall, Ashton-under-Lyne. **Chickens.**—First, W. Kershaw, Heywood, near Manchester. Second, S. H. Hyde. Third, N. Marlor.

HAMBURGH (Silver-spangled).—First, J. Dixon, North Park, Clayton, Bradford. Second, W. Cannan, Adolphus Works, Bradford. Third, Mrs. Pettat, Ashe Rectory, Basingstoke. **Chickens.**—First, Sir St. G. Gore, Bart., Hopton Hall, Wirksworth, Derbyshire. Second, J. Fielding, Newchurch, near Manchester. Third, J. Dixon.

HAMBURGH HENS (Spangled).—First, J. Dixon, North Park, Clayton, Bradford. Second, S. H. Hyde, Taunton Hall, Ashton-under-Lyne. **Pullets.**—First, J. Davies, Bull Street, Harborne, near Birmingham (Golden). Second, S. Shaw, Stainland, Halifax (Silver).

POLISH (Black, with White Crests).—First, T. P. Edwards, Lyndhurst, Hampshire. Second, H. Carter, Upper Thong, Holmfirth, Yorkshire. Third, J. Dixon, North Park, Clayton, Bradford. **Chickens.**—First, J. Smith, West Lane, Keighley. Second and Third, T. P. Edwards.

POLISH (Golden).—First, H. Snowden, 2, Cliffe Lane, Horton, near Bradford, Yorkshire. Second and Third, J. Dixon, North Park, Clayton, Bradford. **Chickens.**—First, Mrs. Pettat, Ashe Rectory, Basingstoke. Second and Third, J. Dixon, North Park, Clayton, Bradford.

POLISH (Silver).—First and Second, G. C. Adkins, The Lightwoods, near Birmingham. Third, J. Dixon, North Park, Clayton, Bradford. **Chickens.**—First and Second, G. C. Adkins. Third, J. Dixon.

ANY OTHER DISTINCT VARIETY.—First, Right Hon. Lord Guernsey, The Bury, near Leamington (Cuckoo Dorkings). Second, J. L. Lowndes, Hartwell, Aylesbury (Andalusian). Third, Right Hon. the Countess of Aylesford, The Bury, near Leamington Spa (Cuckoo Dorking).

GAME (Black-breasted Reds).—First, J. H. Williams, Spring Park, near Welsh Pool. Second, J. Doncaster, North Hykeham, Lincolnshire. Third, H. M. Julian, Beverley. Fourth, J. Fletcher, Stoneclough, near Manchester. **Chickens.**—First, Rev. G. S. Crawley, Crawley Moor, Tiverton. Second, C. Stubbs, Preston Hill, Penkridge. Third, J. Stubbs, Weston Hall, Stafford. Fourth, W. H. Swann, Farnfield, Southwell.

GAME (Brown and other Reds, except Black-breasted).—First, A. B. Dyes, Shropshire. Second, J. Doncaster, North Hykeham, Lincoln. Third, T. Robinson, Poplar Grove, Ulverston. Fourth, J. Fletcher, Stoneclough, near Manchester. **Chickens.**—Cup, First and Second, J. Wood, Moat House, Wigan. Third, H. Adams, Yorkshire. Fourth, M. Billing, jun., Birmingham.

GAME HENS (Black-breasted and other Reds).—First, M. Billing, jun., Birmingham. Second, T. Carless, Nottingham (Brown Red). **Pullets.**—First, W. H. Swann, Farnfield. Second, M. Billing, jun.

GAME (Duckwings and other Greys and Blues).—First, J. Garlick, Liverpool. Second, H. Adams, Yorkshire. Third, T. Carless, Hovingham. Fourth, J. Fletcher, Stoneclough. **Chickens.**—First, J. Fletcher. Second, T. Carless, Hovingham. Third, J. Holme, Prescott. Fourth, W. Pares.

in passing a bird shop in a large town, saw a pair of good Barbs in a cage outside; being in want of such Pigeons, he stopped and inquired the price—that was not out of the way—"but are they a pair?" "Yes, Sir." "Well, I am an old Pigeon-fancier, and I live in the neighbourhood, and I think they are two cocks." "Well, Sir, as you are an old Pigeon-fancier, and as you live in the neighbourhood (hope of future custom arising), I confess they are two cocks."

But I may have it said in reply to my advocacy of this plan, which has already found favour with two writers in your Journal, there are honourable dealers: Mr. Bailey, for instance, would never deceive you. Granted at once in Mr. Bailey's case, but the price! and I own I dare not have dealings with men in business, unless I can see my birds.

As a further reason, I will give my own case, a similar one to that of many. Of recent years I have been a breeder of black Bantams, and had (for death, alas! has thinned them), some as good pullets as I have ever seen; then, lo! my best cock dies, and where am I to get another? Or, I have birds to spare, and no fancier living near me; I take them into Bath, and have a magnanimous offer at a dealer's of eighteenpence a-head! Of course, at such a price I will not sell them, so with regret I kill them, whereas another poultry-fancier might just want what I have too many of, and be wondering where on earth he could buy them.

Such a special column as suggested by your correspondent, "AN EXHIBITOR IN A SMALL WAY," and approved by "EGOMET," would meet the difficulty; open solely, remember, to your subscribers, and to no dealer on any pretence whatsoever. As to being an unfair act in regard to tradesmen, I would reply, We amateurs are driven to it in self-defence, for either prices are absurdly high, or there is a pleasant prospect of deception before us. All that "EGOMET" says about fairness at exhibitions I readily endorse. Mistakes there may and must be occasionally. If there be known unfairness, the press is open. As to Judges, procure known good ones, and trust to their judgment. I may differ here and there from them, "many men many minds," but when acting as Judges I abide by their decision.

Well said, "EGOMET," about Christmas-day. Let nothing break the circles gathered round the hearth on that day, replete with kindness and good will to and among men.

I also agree with "EGOMET" as to a list of the pens sold, their prices, &c., being printed at the end of the prize lists. This could easily be done. The great point is to increase and make easier the means of mutual assistance among the poultry brotherhood; and, rely upon it, this will also increase the love of poultry—in fact, add to the brotherhood. When people see others reap pleasure from a pursuit, and the many difficulties as to procuring birds, &c., done away with, they will wish to try their hands. Prejudice arises from ignorance, pleasure comes with knowledge.

I have throughout this paper gone upon this supposition, that all lovers of poultry are fair and honest, as upon this being the case the success of the plan would wholly depend.—WILTSHIRE RECTOR.

CHIPPENHAM POULTRY SHOW.

The following is a list of the awards at the Show recently held:—

DORKINGS.—First, E. Hedge, Chilton. Second, F. Bailey, Calne. Highly Commended, T. R. Hulbert, Cirencester.

SPANISH.—Prize, A. Heath, Calne.

GAME (Black-breasted and other Reds).—First, H. Waller, Calne. Second, H. Stevenson, Landsend, Chippenham. Highly Commended, J. Orlidge, Chippenham. Commended, T. R. Hulbert, Cirencester.

GAME (Any other variety).—First, J. Muspratt, Heytesbury. Second, J. Goulter, Acton Turnville.

COCHIN-CHINA (Any variety).—First, Miss J. Milward, Newton St. Lo. Second, H. Witchell, Tetbury.

HAMBURG (Golden-pencilled).—First, H. Witchell, Tetbury. Second, J. S. Maggs, Tetbury.

HAMBURG (Silver-pencilled).—First, J. W. W. Hulbert, Chippenham. Second, G. S. Sainsbury, Devizes.

HAMBURG (Golden-spangled).—First, J. S. Maggs, Tetbury. Second, Mrs. Merton, Bishopstrow.

POLANDS (Any variety).—First, J. Phillips, Chippenham. Second, J. Hinton, Hinton.

ANY OTHER DISTINCT OR CROSS BREED.—First, J. Hinton, Hinton. Second, J. J. Fox, Devizes.

BANTAMS (Game).—First, F. Bailey, Calne. Second, F. H. Phillips, Chippenham.

BANTAMS (Any other variety).—First, J. J. Fox, Devizes. Second, E. Cambridge, Bristol.

TURKISH.—First, W. Hower, Sevenhampton. Second, Miss J. Milward, Newton St. Lo.

GRACE.—First, G. Hanks, Quobwell. Second, R. P. Rich, Chippenham. Highly Commended, Mrs. A. P. Smith, Beversbrook; — Coleman, Beversbrook.

DUCKS (Aylesbury).—First, G. Hanks, Quobwell. Second, Mrs. A. P. Smith, Beversbrook.

DUCKS (Rouen).—First, J. W. Brown, Uffcott. Second, Mrs. Kent, Newton.

DUCKS (Any other variety).—First, Miss J. Milward, Newton St. Lo. Second, — Coleman, Beversbrook.

SWEEPSTAKES (Game Cock).—Prize, A. Heath, Calne. Highly Commended, F. Bailey, Calne.

JUDGE.—Mr. J. R. Rodbard, Wrington, near Bristol.

NEW VARIETIES OF PIGEONS.

I HAVE to offer my thanks to Mr. Alfred Heath, for his kindness in replying to my request for a description of that variety of tame Pigeons that has recently been exhibited as Isabel Pigeons. From his writing I recognise them as Dutch Powters. Gottlob Neumeister, in his German work on Pigeons, says they are of various colours, as black, blue, red, yellow, isabellenfarbig (buff-coloured), and white; frequently with white wing-bars on the isabellen, blue, and red, but he has never seen white wing-bars on the black. I remember seeing a pair at the Crystal Palace which most likely were Mr. Heath's, and they exactly resembled Herr Gottlob Neumeister's plate of the Isabellenfarbigen Hollandische Kropftaube. They should, therefore, be called Isabel Powters, and not Isabel Pigeons, as the word Isabel refers only to their colour, and not to the breed.

I should also be obliged by a description of those Pigeons shown as Satinettes and Neapolitans, as both these names have appeared in catalogues of recent Pigeon shows; and as I am not acquainted with the breeds, at least by those names, I ask some breeder of them for full particulars of their origin, peculiar points, colour, &c.

May I beg of any Pigeon-fancier, or reader of THE JOURNAL OF HORTICULTURE, who is acquainted with the Lowtan or Ground Tumblers of India, to send a description of them? Also, if any one can tell what variety of Pigeons it is that the natives of India train for high flying. Are they like any of our high-flying breeds of Tumblers? I have myself a wonderful Tumbling breed of Pigeons, many of which while flying throw from fifteen to thirty summersaults in a minute; some of them roll till they touch the ground, and a few can hardly fly from excessive tumbling. Thus taking an interest in Tumbler Pigeons, I should be greatly obliged for any account of the Indian, or any other new variety. As to the reason of a Pigeon's turning over while flying, I may refer to that at some future time.—B. P. BRENT.

SINGULAR DEPOSIT ON A HIVE FLOOR.

A NEW MATERIAL FOR HIVES—FOUL BROOD.

WELL acquainted as I have long been with the very large accumulation of filth of all kinds too frequently to be seen on the slates of the cottager's hives, yet I certainly was not prepared for what lately met my view upon lifting a hive from its stand, revealing as it did a most extraordinary accumulation of a jelly-like substance, covering the whole of the slate, to the depth of three-eighths of an inch, and which when removed would have filled a large breakfast-cup. It was not merely a cursory glance I had of this singular substance, for, having transferred the hive to a clean slate, I was enabled to examine it at my leisure. What makes it the more remarkable is, that the hive was a new one, tenanted by a swarm of the present season, the combs clean, and the bees healthy, the slate, also, being a new one from a quarry close by. The owners of the hive thinking I might be an intending purchaser, expressed no surprise when I called their attention to the state of the slate, remarking, they always found lots of dirt, but upon close examination they also expressed great surprise, never having seen anything like it before. It struck me at first there must have been a quantity of moist sugar introduced into the hive; but I found it had not been lifted since it was tenanted by the swarm. I can compare it to nothing but calves'-foot jelly, having the same motion when shaken, and resisting the touch with the degree of elasticity. A few bees only were clogged and

less on the surface; there being no other dirt, and very little odour proceeding from it. I can only suggest that it may have been the spawn of some creature, but the extraordinary quantity makes it more surprising and difficult to account for. One portion somewhat more fluid than the rest contained a dozen or more flattish white maggots slowly moving about, quite different from any I remember to have previously observed. I should much wish to know whether any one else has met with this appearance, for I have lifted so many hives without observing even the slightest trace of a similar substance, that it strikes me as being something very remarkable.

I have been experimenting upon a new material for the construction of hives, which I think likely to prove most excellent, so that I am sanguine as to great results accruing from its use. This material is tan, in the compressed state in which it is used for fuel in our neighbourhood. It is free from smell, and will form a hive in which the interior temperature will be very equable. I compress the moist tan into moulds, thus forming the walls of the hive, and the top and bottom slabs, the latter about 3 inches, and the former 5 inches in thickness. Ledges in the front and back take bars as in the ordinary boxes. This material is capable of being moulded into any shape—square, octagon, or circular, with tops flat or dome-shaped like the common straw hive. It takes long drying, but does not absorb moisture or damp subsequently. The material for an eight-bar hive costs little more than a shilling. The cheapness of the material is, therefore, one recommendation. It will have a very pretty effect in the garden. A slate on the top will keep off all wet.

My Ligurian stock, procured from Mr. Woodbury in the spring of 1862, has succumbed to that fearful scourge, "foul brood." Although I gave the bees a new hive of wholesome combs, they dwindled away to some few scores in numbers, and within the last few days an unsuccessful attempt to unite their queen (which, moreover, was a poor, dark little thing) to another hive, which I had rendered queenless, and with every precaution as to her welfare, has now left me in a condition to trust entirely to my common bees; and whether I may renew my acquaintance with the Italians is doubtful, as from what I have seen of the honey-gathering powers of the Ligurians, I fancy they are little, if at all, superior to the little black fellows.—Geo. Fox, Kingsbridge, Devon.

FOUL BROOD.

"My thoughts, I must confess, are turned on peace."

So spoke a Roman senator in olden times, and so in substance spake recently in the columns of this Journal "A HAMPSHIRE BEE-KEEPER," who, raising the standard of peace in this apianian controversy, has invited all to follow him. As for myself, my voice must be for peace; but before quitting this profitless interlude in our discussion, it behoves me to add a word or two.

In the first place, I shall be spared the disagreeable necessity of replying to "B. & W.'s" warlike article in No. 136, in which he appears to have completely exhausted his fire and fury on my unfortunate "enigmatical," which having belaboured to his heart's content, he exclaims, "Let us hope that we shall now be suffered to return to peace."

Mr. Edwards I shall keep in remembrance when I come to discuss some facts in which he is interested. Meantime let him not vex himself in fruitless efforts to make "the cap fit." If it be actually too tight why not throw it aside at once?

To Mr. Woodbury, what shall I say? I could wish to say less than I must. I cannot, of course, pretend to control his beliefs, to alter his views, or smooth down the asperity of words which I have before refuted; but when these beliefs are assumed as facts to which I am by implication called on to assent, and embodied in his last article in the formula of my confession, I must, in honour, interpose my non-acquiescence, and claim the privilege of abiding by facts as they have already been explained by me, and not as interpreted by others. With these remarks I have done; but as my name is directed against principles rather than persons, I am under whatever obligation I may be to join cordially in the efforts to bring about a harmonious settlement of the controversy.

SHIRE BEE-KEEPER," whose vocation I have always regarded as the noblest on earth.

In regard to the general question of foul brood and the subsidiary but very important question raised, as to "Whether bees do remove chilled and abortive brood in all stages from the hive," it is my purpose to devote a paper exclusively to its consideration. It will be seen that my views are diametrically opposed to those of Mr. Woodbury, "B. & W.," and Mr. Edwards on this question, and I think it is but due to the interests of apiculture and truth that this subsidiary question should be thoroughly examined into and cleared up. If I shall be able to demonstrate satisfactorily the negative of this proposition—namely, that "bees do not remove chilled and abortive brood in all stages from a hive," which I think I can, then I shall pave the way, I hope, for a general acquiescence in the doctrines which—in opposition to the most skilled apianians of the day, both home and foreign, in reference to the nature and origin of foul brood—I have had the temerity to propound in these pages. This at present is a promise. The fulfilment anon.

Meantime I hail as a good omen (for "coming events," it is said, "cast their shadows before"), some faint indications in Mr. Woodbury's last paper of a little wavering, I imagine, in his views on this very point. Some revelations from "the north" have apparently wrought this change. But be this as it may, we must all, as true students of Nature, search after truth in the love of it; and while probing Nature herself to give forth "her answers," may we, as the Editors reminded us in a recent Number, accept these as from an unfailing oracle. "Great is truth and it will prevail." *Magna est veritas, et prevalebit.*—J. LOWE.

OUR LETTER BOX.

POULTRY CHRONICLE (*Poultry-Keeper*).—There is no separate publication now with that title. It was amalgamated with this Journal some years ago.

DISEASED POULTRY—CASE OF GAPS (*L. R.*).—We fancy it is the gaps, but we have never seen birds die fast when they are thus affected. The "stretching of necks and gaping" describe the symptoms exactly. Of all the remedies we have tried, and their name is Legion, we know but one effectual. We have tried it only this year, and with great success. It is easy to administer either by putting a piece as large as a pea down the throat, or by keeping a lump always in the water. It is camphor.

FOOD FOR POULTRY (*J. M. C.*).—Barley is unquestionably a better food for poultry than Indian corn, and, as a rule, it is the cheapest. But the small birds eat so much of it that recourse must be had to Indian corn—two-thirds barley, one-third Indian corn. In very cold weather we shall feed on the latter entirely, to avoid nourishing the myriads of sparrows, greenfinches, chaffinches, yellow-hammers, and all the other finches and hammers.

POLANDS AT THE NORFOLK SHOW (*F. H. P.*).—We have not the prospectus of the Society's Show, but it probably contained the usual rule, that the Judges may withhold prizes if they deem the birds undeserving of an award. The Judges may be wrong in their decision, but no Committee would reverse their decision unless a case was made out showing improper influences. It was not courteous on the part of the Secretary to refrain from answering your letter.

SEBASTOPOL GESE, &c. (*Wear Valley*).—Full information has been given in our back Numbers on all these subjects. We know no book devoted to them. They will all bear our winter as well as any of our own birds. We have Carolinas and Californian Quails exposed to all weathers, now and for more than a year, with no other shelter than a pent roof 5 feet from the ground at the lowest part. We had Sebastopol Geese out of doors all last winter. A swimming place is not necessary for the Geese, but it is for the Ducks. It need not be large at this season of the year. In the early spring, indeed soon after Christmas, a swimming place is absolutely necessary for the Geese as well as Ducks. They will not breed without it. The diet of the Geese will be barley; of the Carolinas, barley varied at times with a little hempseed; of the Californians, oats, barley, and bread. All require a plentiful supply of grass or other green meat, and the Quails will not live without it.

ILLUSTRATED POULTRY BOOK (*Herberta*).—The "Poultry Book" is the best illustrated book we know. Bantams and Cochins-Chinas may be kept together, but no other small fowls. There is all the difference in life between a Bantam and a small fowl. Cochins-Chinas will do well in such a place as you describe; but they will not perch on trees: it is not their nature. A very small and low house will answer every purpose for their roosting place. It will not be unightly, and the fowls will breed prize stock if they are good enough.

FEEDING BEES (*T. R. D.*).—Six pounds of lump sugar to one pint of water is about four times the proper quantity. We put three pounds of sugar to two pounds of water, and boil the syrup a minute or two.

WATER IN LEAD CISTERN (*Oxide of Lead*).—Water so kept is always injurious, more or less, to those who drink it. The intensity of the injury depends upon the purity of the water—the purer it is the more rapidly it acts on the lead. The usual symptoms are costiveness, tenderness over the stomach when pressed upon, nausea, and vomiting.

REARING CALVES (*F. S. Allen*).—You can have No. 62 of this series of our Journal if you enclose four postage stamps, with your address. In that case we will send you the volume and the long to reprint.

WEEKLY CALENDAR.

Day of Month	Day of Week	DECEMBER 8—14, 1863.	Average Temperature near London.			Rain in last 26 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.		Day of Year.
			Day.	Night.	Mean.		m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.		m. a.	m. a.	
8	Tu	D. Doan died, 1841. Bot.	46.5	34.0	40.2	21	55	af 7	49	af 3	50	4	8	2	27	7	59	342
9	W	Rivinus born, 1662. Bot. (ends.	46.3	35.7	41.0	18	56	7	49	3	9	6	49	2	28	7	33	343
10	Th	Grouse and Blackcock shooting	46.4	35.5	39.9	12	57	7	49	3	19	7	43	3	29	7	5	344
11	F	Michalina born, 1697. Bot.	45.4	35.5	39.9	9	58	7	49	3	22	8	49	4	30	6	38	345
12	S	Dr. Darwin born, 1793. Bot.	45.6	35.8	39.7	16	59	7	49	3	14	9	4	6	31	6	10	346
13	Sun	3 SUNDAY IN ADVENT.	46.4	35.7	39.6	12	0	8	49	3	54	9	25	7	3	5	42	347
14	M	J. C. Loudon died, 1843. Gar.	45.7	34.0	39.8	13	1	8	49	3	28	10	46	8	4	5	13	348

From observations taken near London during the last thirty-six years, the average day temperature of the week is 46.0°, and its night temperature 33.7°. The greatest heat was 61°, on the 13th, 1842; and the lowest cold, 11°, on the 13th, 1846. The greatest fall of rain was 0.62 inch.

POT-CULTURE OF PEACHES AND OTHER FRUITS, VERSUS THE PLANTING-OUT SYSTEM.



ALTHOUGH the cultivation of Peaches and other fruits in pots is not by any means an idea of recent origin, it is only within the last twelve or fourteen years that it has been extensively practised; and to some extent it has become popular by the erection of houses on a somewhat extensive scale for the express purpose of

growing such fruits in pots. To Mr. Rivers, the intelligent nurseryman of Sawbridgeworth, more than to any other man, the public are indebted for whatever amount of pleasure or profit that has arisen from the system. All who have watched, for the last eight or ten years, Mr. Rivers' almost incessant and rational advocacy of the system, and the dexterous energy with which he has appeared on almost every field to shield it from attack, must have been deeply impressed with the idea that the culture of fruit trees in pots is a system the desirability of which he most earnestly believes, while his own success has been proof sufficient that good fruits can be so produced in abundance. This may be accepted as a fact not to be controverted.

I have never had the pleasure of an ocular demonstration of Mr. Rivers' great success in this particular department, but I have met with gentlemen who have been to the nurseries at Sawbridgeworth, and who have corroborated Mr. Rivers' own statements of his successes. That such fruit can be so produced is a fact which requires neither demonstration nor proof. It is only necessary to go to Sawbridgeworth and several other places where the inspection of the system is kindly permitted to all who are interested in the matter. This is, however, a very different thing from recommending the pot-system in preference to any other. This has generally been carefully avoided, as far as I am aware of, by its most ardent advocates, no doubt because they are convinced that such a one-sided view of the matter would only have provoked the ridicule of all who understand by what means the production of the greatest quantity of first-rate fruit with the least possible outlay of time and expense can be obtained.

The controversial skirmishes on this subject which have come off in the various periodicals have no doubt been productive of much good. They have at the same

time thrown the inexperienced on the horns of a dilemma as to which of the two systems is to be preferred, because no reliable comparisons have been drawn by persons well conversant with both sides of the question. I have sometimes had to advise in this matter, and always in favour of planting out and training to a flat surface in the usual way. There is, however, no particular fault to find with any one who chooses to recommend the pot-system, for I would like to see the plant or fruit that an English gardener could not make productive and interesting in a pot; and those who grow their own fruit, and are not responsible for the best possible supply, may grow it as they choose. But the strenuous advocacy of the pot-system as the ideal of perfection by those who probably date their gardening experience from some time between this and the period when orchard-houses have been inaugurated, and who probably have never tried any other system, is amusing enough. Let every system have its full share of merit allowed it, and however desirable the pot-culture of fruit may be considered, the great majority of good gardeners who have to supply the fruit market or their employers' tables with the very best fruit and on the most economical principles, are thoroughly satisfied that their task must be performed with trees planted out in borders and not grown in pots, however well managed the latter may be.

A very interesting article in this Journal, November 24th, from the pen of "T. R.," sets this matter completely at rest, if any doubt ever existed. He balances carefully the comparative merits of the two systems; and the sum total of his deductions is that a fourth more in quantity, and fruit of superior quality, can be produced from trees planted out and trained to trellises. Surely this is a most powerful argument in favour of any system, especially as it will be suspected that it comes from the most powerful advocate of a rival system. The principal argument in favour of trees in pots is that it affords more pleasure than when grown and trained otherwise. Many will venture to suppose that this argument will weigh only with a very small number of growers. No doubt a houseful of trees in pots must be interesting and pretty, yea, lovely; but in most cases the proof of the pudding will be considered to lie in something else.

It would be very interesting to make a comparison of the expense of furnishing an orchard-house in the two different ways, and of the time and labour that are required to bring a crop to maturity, the chances of success or failure, as well as the different other purposes for which, under the two methods, such structures are available.

If the expense of furnishing be first taken into consideration I will refer, for the sake of illustration, to a long lean-to orchard-house which was erected here last year. It is 135 feet long, 11 feet wide, 12 feet high at the back, with a two-feet front light. There were a few very fair Peach trees on the wall before the house was built. The rest of the space has been furnished with dwarf-trained and rider Peaches and Nectarines. But suppose the whole had to be newly furnished with trees,

sixteen trees would be sufficient for the back wall—eight riders and eight dwarfs. Trees can be trained about 7 feet up from the front close to the glass without shading the back wall, and here twelve Peaches and Plums, dwarf-trained trees, in equal proportions, have been planted. Here are eight riders at 10s. 6d. each, and twenty dwarfs at 7s. 6d. each, which amount to a few shillings under £12 for furnishing the house on the planting-out and trellis-training system. First-class trees can be bought at the prices quoted, and I always find that they bear a few fruits the same year they are planted; and some of the riders which I planted last December are now covering more than 50 square feet of surface, so that with them and the dwarfs the wall is almost completely covered.

Suppose that, instead of this lean-to, it were an orchard-house 67½ by 22 feet, it would require about 120 trees in pots to furnish it, which at 5s. amount to £30—a sum sufficient to furnish and heat the house with hot water on the rival system. Perhaps trees in pots could be purchased for less than 5s.; so could the trained trees in the other case, but in both cases they would be less or inferior.

In the lean-to house referred to there is a training surface of more than 2000 square feet fully exposed to the sun, which, the advocates of the pot-system being judges, is the best possible position for producing fine fruit. True, it may be termed an unnatural mode of training the branches, but not more so than that to which the roots are subject in the other case, to say nothing of the incessant pinching to which they are, no doubt, very properly subjected. The house in question is so ventilated that a free current of air can be made to play on every leaf, and when desirable a shower of rain in summer can be allowed to fall on the whole of the back wall. The most extraordinary house of Peaches on this principle which I have ever seen is at Dalkeith Park. The Pears in pots at the same place are, no doubt, fine in their way, but I never heard that any one was astonished with them, while plenty have so expressed themselves with regard to the Peaches, which have been transformed in a few years from a wall of indifferent trees into the style with which plenty are now familiar, and all by a mere covering of glass.

With regard to the labour and attention rendered necessary by these two modes of producing fruit, I would simply appeal to all gardeners who have had any experience in the matter, or who are, from their intimate knowledge of managing any other plants in pots, capable of drawing a pretty correct estimate, and I feel certain they will have no difficulty in deciding in favour of the planting-out system. I would not for a moment detract from the correct impressions which have been conveyed of the pleasures attending the management of fruit trees in pots: far from it. It would, indeed, be difficult to overestimate pleasing hours which might be enjoyed by any who had a fancy for so spending their time and money. But, then, taste is so varied that while one may derive pleasing recreation from watching and tending a Peach tree in a pot, another might reap the same enjoyment from a fruit tree managed in any other way. On the other hand, there is no necessity why a Peach-house, or a house of mixed fruits trained fan-fashion, should be the stale monotonous thing that it is sometimes represented. There is the back wall a sheet of blossom or fruit, the front trellis is the same. Underneath on the floor there may be all sorts of plants that delight in a cool airy house and partial shade. In our own house here, for instance, there were in spring eight thousand Geraniums in pots a perfect sheet of various shades of blossom, from white to crimson; and elevated above these, on pots turned upside down, there were specimen plants to take off the even surface. All summer, and particularly autumn up till the end of November, it was the favourite resort of the family and their visitors. There was a bed of Geraniums 8 feet wide along the whole length, with a specimen *Statice profusa* in every other light, and on each side of the *Statice* was a specimen of *Centaurea ragusina*. The edging next the path was of *Statice*, *Lobelia speciosa*, and *Coleus Verschaffeltii* mixed, and the effect was really splendid.

Now for an amateur who is fond of display of this kind, managed in a well calculated to give a fine effect, both the flowers and the foliage, he can have

required for a house full of fruit in pots. At present there are fifteen thousand Geraniums in the house, which are more or less in flower, and a more delightful promenade is scarcely conceivable in a house from which a full crop of excellent fruit can be obtained. With regard to the difficulties which lie in the way of a beginner, as to learning the different points belonging to the two systems, I would have no fear in finding gardeners who would teach a novice how to manage planted-out and fan-trained trees as soon as any one could reveal to him all the outs and ins of the pot-system. The labour and skill required in the former case is certainly not more than that which is indispensable in the latter.

It may be asserted that fruit trees, when planted in borders under glass, make rampant and unfruitful wood, and no doubt under improper management such will be the case. But this is an evil which can be prevented and remedied in cases where it may occur; and however much can be said in favour of pot-culture, it is not right to single out cases of mismanagement as disparagements to the planting-out system. By all means let both methods have fair play and no favour, and their faults should be as faithfully written on their faces as their merits. To use an old Scotch proverb, "Our sins and debts on this score are often mair than we think." The old method of roots in borders and heads on trellises may yield less pleasure and labour, but it has the merit which nine out of every ten will first consider—namely, that of yielding more and finer fruit. D. THOMSON.

VISITS TO GARDENS PUBLIC AND PRIVATE.

MR. WARD'S, THE ROSERY, IPSWICH.

"A PROPHET hath no honour in his own country," thought I, as on a very muggy morning this last November, after four and twenty hours soaking rain, I set out to inquire my way to find the world-known raiser of John Hopper. "You bees looking for parson Ward," says one, "he as lives next the hospital." "No, I be'ant!" in as broad Suffolk as I could muster; "it's Mister Ward, a nurseryman." "Doan't know." After many fruitless attempts I lighted on one somewhat more knowing than his predecessors. "Ah! it's he as lives at California." Well, I hadn't seven-leagued boots or Nadar's Géant, and so I couldn't venture on the diggings. Then it was explained to me that this was a suburb of Ipswich, and that in that direction I should find my man. Well, despite of dirt and mud, of which Ipswich seems to have a very fair proportion, I set off for California, which I found was on a tolerably good eminence; and after sundry inquiries and bafflings I came at last in front of a very modest unpretending-looking house, with a greenhouse close to it, which a board announced to me was Mr. Ward's Rosery. It was, I am bound to say, as unlikely a place to find anything of rosarian interest as any that I know of, and yet a most notable instance of how little we are to judge by appearances; for here in this wild bustling hill, with its poor stony soil, there is going on a series of operations which will, I hope, if its owner is spared, yet produce something worth looking at, as they have already produced one of the very best (next to *Devoniensis* the best) of English-raised Roses.

To grow Roses is one thing; to raise Roses is another—not to raise them at haphazard, as our worthy French neighbours do, but to raise them on scientific principles, to carefully select such sorts as are likely to hybridise well, and to produce desirable results. Now this, Mr. Ward has already done; and it is no slight encouragement to raisers of really good Roses to know what he has done with John Hopper. In the twelve months from October 1st, 1862, when he first sent it out, to October, 1863, he has sold 6000 plants and upwards. He kindly showed me his book, in which every order was entered, and, more than this, order upon order which he had not been able to execute owing to his stock being completely run out. When we recollect that this involves a receipt of some four or five hundred pounds, it shows what may be done by a judicious hybridiser, for this is no chance work. Mr. Ward knows thoroughly well what he is about, for Roses have not been his first love. He lived formerly with Mr. Chater, of Saffron Walden; and it was that Mr. Ward was his foreman, and, I believe, the

manipulator in the matter, that Mr. Chater by the raising of Comet first took that foremost rank amongst Hollyhock-raisers which he has ever since maintained. After some years spent with Mr. Chater Mr. Ward migrated to Mr. Bircham, at Hedenham, in Suffolk, then an extensive Rose-grower, and there he conceived the idea of carrying out the same principles of hybridisation that he had so successfully adopted in the case of the Hollyhock. Many shook their heads, and called him, as they will ever do, an enthusiast—a term which must be borne by every man who is really in earnest either for the things of time or eternity. Even his old master thought him visionary. However, he felt that he was right, and John Hopper has been the result of his enthusiasm. But he is not contented with the past, his motto is "Onward," and I firmly believe that he will yet add further laurels to those he has already won.

It is curious with what different eyes we look at the same thing. A small tree of Gloire de Dijon was nailed to the front of his house. Most people would have passed it by, and thought it hardly worth notice; but to Mr. Ward and the Rose-lover there was much on it to look at and speculate about—viz., two well-swelled hips hybridised with one of our best dark Hybrid Perpetuals. Imagine what a sensation a deep-coloured crimson Tea Rose would make, or a yellow Hybrid Perpetual. And why not? It is this determination to strike out of the old beaten paths and to take up original notions that is a proof of genius, when common sense is also allowed to have its weight. Then Mr. Ward has some very promising seedlings. Of course, in November it was too late to see them in bloom: several of them he spoke most highly of, while others, which he pronounced equal to the ruck of French Roses sent over every year, he had discarded. He will not send out a Rose until he has found by careful watching that it is likely to do him credit.

Mr. Ward's ground, as I have said, is poor—just one of those grounds where the great value of the Manetti stock is seen; but until the present year he has also had a very large stock of fine Roses on their own roots. The dry and hot summer of this year has, however, somewhat baulked him, his plants being much smaller than usual. I wish I could convey an accurate notion of his method of propagating these. I fear I shall make but a mess of it—however, I can only do my best. In one of his greenhouses he puts about five hundred plants, from which his cuttings are to be made. His first crop of cuttings from these consists of about 1500. I should say the plants are put in 16-pots, four in a pot. His next batch is about 4500, and his next somewhat larger, so that from these he has obtained in the course of three or four months from ten to twelve thousand cuttings. His propagating place is quite a model. In a greenhouse he has glass cases over a tank of hot water, in fact a double case, but differing in this respect from other similar structures, that the fronts slide down, and consequently the drip occasioned by lifting up and down the sashes is not experienced. By this tank a heat of 100° to 120° is maintained, and great care is exercised that damp does not settle about the young leaves, and this he effects by frequent and gentle syringings. In a few days a callus is formed, and when rooted the young plants are potted-off and put into single pots, gradually inured to a colder atmosphere, and then planted out, when they make fine plants by the autumn—plants 18 inches to 2 feet in height. The beds used for this purpose are sunk somewhat below the level of the surface, as the soil in Mr. Ward's garden is so very light that to keep them watered in dry seasons a matter of some difficulty. By this process, he assured me, his losses were not 2 per cent.

During the progress of his experiments in hybridising some curious facts have come under Mr. Ward's notice. Thus he hybridised Noisette Lamarque with Prince Léon, H.P. Of the produce of the cross one came perfectly single, of the colour of [Lamarque, most vigorous in habit, but, of course, useless. Then, again, he had planted against a wall R. bracteata, Fortune's Yellow, and other varieties of Roses, but he has never succeeded in his crossing with them. His hope was to obtain an evergreen Rose about the size and colour of the Hybrid Perpetuals. Again, he has found that it is never of any use hybridising semidouble flowers, for these will not produce thoroughly double flowers. There can be but little doubt that a vast number of the

Hybrid Perpetuals which have come to us from France are seedlings of Général Jacqueminot, by far the freest seeder that we have. Duc de Cazes, Vulcain, Princesse Mathilde, Prairie de Terre Noire, &c.—Roses which cannot have a permanent place in our lists, however they may please for a year or two, betray their military origin. Mr. Ward avoids this by only using double varieties, and by saving only impregnated hips. These latter he has found, he fancies, to be much finer and larger than those which are naturally impregnated.

Amongst the results of his labours I may mention that he has a fine seedling which he intends to let out next year, and which I hope to see and report upon in due time. He has called it Mrs. Berners, and I trust it may be a worthy successor of John Hopper. He feels that he has a character to sustain, and he will not lightly forfeit it. Then he has another under trial, which he pronounces to be the most perfectly double Rose he ever saw, and a bud which he showed me seemed to confirm this opinion; but as to its merits we must wait some time before we decide.

Such, then, are a few imperfect notes concerning the whereabouts of John Hopper and its raiser; and now a word as to the Rose itself. It has, I believe, this season disappointed a good many. This I can well understand: it is one of those peculiarly tinted Roses that require a cool summer to develop their beauties, and the past summer has been not a cool but a very hot one. To this cause, and this alone, is to be attributed any disappointment that may have been felt concerning it, and I feel convinced that it will yet fully maintain the high character given to it; and if its raiser will only give us a few more in different styles as good as this, or, still better, give us a crimson Tea or yellow Hybrid Perpetual Rose, he will be gratefully remembered as one of the greatest benefactors of the Rose-growing race, and their name is Legion.—D., Deal.

LEAN-TO GROUND CURATES' VINERIES.

In the "Curates' Vineries," which from time to time have been noticed in your columns, what is the object in having the glass framework ridge-shaped, thus—A? Would there be any objection to putting another row or two of bricks and having the framework flat? With the framework flat there would be a considerable saving in cost. Of course, one end, say the north, must be a little higher than the other in order to throw off the rain; but there would be no difficulty in this, especially in situations where the ground lay on the incline.—B.

[The ridge-shaped roof is to throw off the water, and also to offer two favourable angles to the sun. Another or even two more rows of bricks may be added if height is required; but they must be placed so as to leave pigeon-holes for ventilation. A lean-to ground vinery with a one-inch board for the back would do very well, but it should be placed on bricks so as to be properly ventilated, and the sloping glass roof should be facing the south or south-west—in fact, such a structure would be very cheap, more easily made, and quite as efficient as the ridge-shaped roof. The back wall or board of such a vinery should be 18 or 20 inches high, its front from 6 to 8 inches. Grapes would ripen well in such structures, and for ground on the incline they would be more convenient than ridge ground vineries.]

GRAFTING VINES.

As an answer to "T. R. O.," and other inquirers, we reply that if old Vines are in a good border and strong it would not be advisable to root them out, inasmuch as you will get the sorts you want to introduce into a full bearing state sooner on established stocks than if planted in the usual way. If your established Vines are not in good condition then root them out by all means, and introduce your new varieties by making a good border and planting young healthy Vines in the usual way. The Barbarossa is, in some cases, a rather shy fruiter; and it is more than likely that its being put on to a less vigorous-growing sort, like the Black Frontignan, might have a beneficial effect on it in this respect. If you mean the Canon Hall Muscat and

of Alexandria for early forcing, you will not find them well adapted for that purpose unless with the best means of bottom heat, and even then they are not to be depended upon for early work. They may both be termed shy setters, and they take a long time to ripen. The White Frontignan, on which you propose to graft them, would answer this purpose better than either of the two; but if you do not mean to begin forcing before the end of January or early in February, the Muscats succeed very well, but will not be ready for table nearly so soon as Chasselas Musqué, Royal Muscadine, and Buckland Sweetwater, all of which will ripen a month before the Muscats, and are good early white Grapes.

If the state of your old Vines is in all respects satisfactory, the inching of green wood to green is by far the quickest and best way, and is performed by taking a deep slice off the sides of both the stock and the Vine you desire to introduce, and tying the two together with a piece of soft mat. The union takes place sooner and better thus than when a scion of last year's growth is grafted on in the usual way.

—D. T.

EXHIBITING ROSES.

"D." BEGINS by asking, What is a truss? as if there were no question upon the subject of exhibiting single blooms or trusses. I think he should have first asked, Must Roses be shown in trusses? He says he thinks they should—1st, because a Rose naturally of a medium size can never be exhibited large (I suppose he means large through disbudding), unless by the loss of refinement; and, 2ndly, that a truss is the natural production of the shoot, and that therefore disbudding ought not to be allowed. These seem to be his only objections to disbudding.

As to his first reason, I entirely differ from him in thinking it a sufficient one. The practice would probably only obtain with medium and under-sized Roses, and I believe, if properly carried out, would tend only to increase the size of such Roses and bring them more on a level in that respect with those naturally of a larger size, and thus add uniformity to a pan of flowers.

That increase in size is, as a rule, obtained at the cost of refinement I emphatically deny. I speak from experience, having 800 to 1000 plants. Of course, I am assuming that moderately high cultivation is employed, and that the roots are moderately thinned. I know quite well that excessively high cultivation and immoderate thinning will produce "coarse" Roses (if any Rose can be coarse); but the abuse of a thing is no argument against its moderate use.

Then as to his second objection, I confess I do not see any logic in it. What is the natural production of a shoot in a Carnation, a Pink, or a Hollyhock? What the natural state of a bunch of Grapes, of many a Peach and other fruit tree? Why should the natural production of the shoot of the Rose be more regarded than the natural shoots of other flowers and of fruits? "D." seems to forget that Roses shown as cut flowers are florists' flowers, should come as nearly as possible up to the florists' standard, and be judged by such standard. Effectiveness produced by trusses should not be aimed at, but perfection in each individual bloom.

If that can be more nearly reached by means of disbudding, why should not the rosarian disbud as well as the grower of the Carnation, the Pink, or the Hollyhock?

I take it that form, substance, colour, and size are the points to be regarded in a cut Rose, and in the order named. The first two, and perhaps the third, depend much on the variety, irrespective of cultivation; but the last in the smaller kinds of Roses can only be attained by high cultivation and liberal disbudding.

"II. How many trusses (blooms?) should be shown?" I am happy to say I entirely agree with "D." in his remarks under this head and on No. III.

"IV. Ought the classes to be separated?" I was, I think, one of the first—if not the first—to advocate separation. I do not know that I have any more to say upon the question, except to observe that, in my opinion, if any variety of Rose should be shown in a separate class, that variety is the *Keens*. There is scarcely one of their variety—I do not know

Roses are truly beautiful as Moss Roses, and should be shown with their lovely buds on the trusses—in fact, should be shown in trusses—but they are altogether out of place in a pan of Roses shown for form, substance, and colour—i.e., shown as florists' flowers.

V. As to Fancy classes. I think that the money expended on these would be better laid out if given for the best English-raised seedling. The prize might accumulate until a Rose worthy of it was produced. Giving prizes to huge bunches of Roses is, in my opinion, a great mistake.—P.

FRUIT ON STEPHANOTIS FLORIBUNDA.

I HAVE NOW, on one of the plants here, a fruit measuring 5½ inches in length and 8 inches in circumference. The plant is growing in a No. 3-sized pot, and has fruited two years in succession. From 70° to 80° of moist heat is given from April to the time of flowering, when the plant is removed to the conservatory, where it remains until September. It is then taken back to the stove, and is kept in a temperature of from 50° to 55° during winter, with a rise from sunshine in spring; little water is given from October to February, only just sufficient to keep the leaves from flagging.

No attention is paid to impregnating the blooms, although I find several formed in August continuing in a small state until April. These I thin to one, and the fruit rapidly swells and is ripe about December.

A mixture of equal parts of peat, loam, and leaf mould, with occasional waterings of clear liquid manure, suits this *Stephanotis* well.—W. LANFAR, Gardener to T. Parry, Esq., Sleaford.

CUTTING OFF LEAVES FROM STRAWBERRIES.

It was not my intention to enter upon this subject again; but your correspondent, Quintin Read, appears to think I am annoyed at an expression used by him in an article contributed to your Journal of October 20th, in which the word "barbarous" was applied to the indiscriminate removal of the leaves from the Strawberry plants previously to the winter setting in. But I assure him that I by no means feel annoyed at anything that he has contributed to your Journal.

Your correspondent also states that I adopt a rough-and-ready way of manipulation by the introduction of a novel instrument for that purpose in lieu of a knife, in the shape of a scythe; yet he states that many gardeners, as soon as the fruit was gathered, used to cut or mow off all the leaves. And when the term "mow" is used, I take it for granted that a scythe was used to perform the operation. If so, in what shape or way can the scythe be pronounced a novel instrument for that purpose? I by no means consider it a newly-introduced kitchen-garden implement, for I have seen it used for many purposes there besides mowing-off Strawberry leaves. For instance: I have seen it used for mowing off Asparagus stems when ripe, and also Potato haulms; I will not go so far as to say weeds, because I never did see these mown down; but I have frequently heard of this being done; and I do not think the scythe would be at all out of character if used to mow off all the spent or decayed stems from the perennial plants in autumn, providing we had a large bulk, and stood free of everything else in order that we might get a good swing. A practical man, and such as the one that has mown off the Strawberry leaves and Asparagus stems for the last ten years in this place, I am quite sure would mow them off quite as well as he could cut them off with an ordinary pocket-knife, and with one-fourth the time and trouble. I have seen the scythe used in more than one large place to mow the Box edgings to the gravel walks in a kitchen garden. Although this may appear strange to your correspondent, nevertheless it is done, and in such a way that it does credit both to the man and his director.

In reference to produce of fruit from the quarter of an acre of *Keens* Seedling, I was perfectly satisfied when I stated that we picked two bushels at one time, and little short of half-a-bushel daily for three weeks.

I may add that I mowed the leaves off the *Keens* Seed-

lings this season in the second week in July, after I had selected all the strongest runners for forcing in pots: therefore they had the same time to make and ripen their growth as those in pots, this being a considerable time before the setting-in of winter, as your correspondent will perceive. The plants are now 2 feet in diameter, with fine luxuriant foliage, and every particle of them well matured. Nothing is left to present an unsightly appearance or for the wind to blow away into any other part of the garden through the winter months.

Your contributor remarks that his plants are 2½ feet in diameter. I presume that includes the old spent or decayed foliage. Unquestionably his plants will make some growth; but I cannot see in what way they are ripened when almost entirely concealed by their old spent leaves; and if we should have any such cutting winds during severe weather, I fear it will deprive his plants of their clothing that he allows to remain through these mild autumn months. That appears to me like heating a house full of tender plants during mild weather, and allowing the fire to go out when severe weather sets in.—J. B. C. P.

RIPENING GRAPES IN A GREENHOUSE WHERE FLOWERING PLANTS ARE GROWN.

My Grapes do not ripen well, and many bunches have been both soft and sour, though having as much fire as the gardener wished for. I am told that the reason is, that I have Geraniums in the house; and I have been told, also, that "Grapes never do well in a greenhouse." I shall be much obliged by your telling me whether this is the case, and whether Grapes cannot be successfully cultivated in a greenhouse where they are not required to be ripe before August or September, and from whence the flowers (with a few chance exceptions), are removed in May to a cool conservatory to bloom there? The Grapes are chiefly the Black Hamburgh.—AGNES.

[Yours is just one of those cases where we would like to have more minute information regarding the particular conditions under which your Grapes have failed to ripen properly. There is no reason arising from the atmosphere of your greenhouse why they should not ripen if the plants are removed in May and the house then managed as for Grapes; but if the gardener has not full liberty to study the Grapes independently of any particular consideration for the plants, then you must not blame your gardener if your Grapes are not good. Grapes may be thoroughly ripened and be excellent in a greenhouse in the one case, but there are many chances against their being so in the other. If your Grapes have ripened under similar circumstances in former years, then the cause of failure this year must be looked for in something else.]

Generally speaking, Vines that are left to take their chance in a greenhouse till early summer require a good deal of fire heat during the latter part of the season to insure their ripening properly, particularly in cold localities. We cannot give any more definite answer to your questions as to the correctness of your gardener's statement in the absence of other details.]

ROSES IN THE SUBURBS.

As the season for transplanting has now commenced, perhaps a continuation of my last paper on the above subject may be considered not without interest and utility by those readers of THE JOURNAL OF HORTICULTURE who are dwellers in the vicinity of large towns, particularly as space compelled me to close my former communication with the *Roses* of 1862. Before proceeding further, however, I would impress upon all who are about to procure fresh stock the absolute necessity of careful planting if they wish to attain success. When plants on the briar are received from the nurseries it will usually be found that they have been planted much deeper than they ought to be, especially when placed in their final positions. There are many reasons for this system of deep planting at the nursery which it is needless to enlarge upon here; but they do not apply to private grounds, in which it ought never to be practised,

No briar stock ought ever to be deeper in the ground than the collar; and if plants have already been planted so, upon removal the error should be rectified, and a few handfuls of soil placed round that portion of the stock which has previously been buried too deeply, in order to protect it for a time from exposure to the atmosphere, to which it has not been accustomed: this soil may be removed gradually at a favourable season. It is also a good plan to place a handful or two of light earth round the bud of plants worked upon the Manetti before finally covering-in. It encourages root-action from the bud itself as well as from the foster-stock; so that eventually a double set of roots exists, and the stock, if preferred, may be entirely cut away, leaving a Rose upon its own bottom.

But to return to the discussion of suburban *Roses*. *Téa Gloire de Dijon*, hardy in constitution, free in growth, in bloom the first and last, is the best of all *Roses* for unfavourable localities, and indeed for anywhere else. Even an inferior flower of this variety is striking and better in quality than the best of some kinds, while a perfect bloom is unsurpassed. I can scarcely believe this should be considered a *Tea Rose* except in scent, but rather a hybrid from some of the strong-growing Bourbons, possibly from *Souvenir de Malmaison*, which it much resembles, though stronger in growth and different in hue.

Jacqueminot it is scarcely necessary to comment upon, except to remark that it is the parent of almost all the high-coloured varieties introduced during the last few years. If a cross could be obtained between this and *Gloire de Dijon* (and I do not see why it should not succeed), we should acquire a new strain of *Roses* of most valuable properties and of novel lines of colour, much superior to the loose high-coloured Hybrid Perpetuals, almost all alike, and the flimsy *Teas* that are now season after season foisted upon the *Rose-growing* public.

Jules Margottin, Mesdames Knorr, de Cambacères, Domage, Rivers, Laffay; Anna Alexieff, Comtesse de Chabrilant, Lord Raglan, and *Triomphe des Beaux Arts*, are so well known that to describe them in detail would be useless repetition. The following, however, are less common. Hybrid Perpetuals: *Mdlle. Therese Appert*, a sort of pale peach or blush, very free and late bloomer; full, flatish flower; of moderate growth. *Madame Bruny* (this I am disposed to set down as really a Bourbon), peach; full flower; strong grower. *Pæonia*, bright crimson; large, full flower; free and late bloomer, good habit. *Prince Imperial*, rose colour; one of the largest and fullest flowers grown; not popular at the nurseries, as it is one of those kinds that send up one or two leading shoots only, and consequently take two or three seasons to make a saleable head—nevertheless, it is a good flower in the rosery. Large *Roses* that open well generally make the best for unfavourable situations. *Maréchal Pelissier*, light rose, globular, succeeds where *Auguste Mié* will not, and is somewhat in that line of colour. *Narcisse* (query, *Tea* or *Noisette*?—is entered as both in the lists), though small is always in bloom; the flower is beautifully formed, and the colour exquisitely pure; light yellow, canary centre; the growth is slender, yet it does well near town. *Bourbon Apolline*, light pink, pretty; rampant, straggling grower. The above-named I have found or seen to do very well, and are worth the attention of suburban rosarians. There are a few old favourites, such as *Général Brea*, *Madame Guinoisseau*, *Mathurin Regnier*, and *Gloire de Vitry*, still under trial.

To such enterprising spirits as are inclined to venture out of the beaten track, and experimentalise a little on their own account, I would point out the following varieties of 1863 as likely to repay investment. I have seen them myself, and have received accounts of them from sources which I have every ground for believing to be entirely trustworthy.

HYBRID PERPETUALS.

Alfred de Rougemont.—Crimson purple; fine shaped and full flower; vigorous habit.

Baron Adolphe de Rothschild.—Fiery red; large, full, and vigorous. I am assured that this is likely to be a first-rate variety. The raiser is to be depended on.

Baron de Rothschild.—A fine Rose, more lilac than the above, and scarcely so large and vigorous.

Jean Goujon (Margottin).—Brilliant red; a large saucer-

profiled, flat-faced, full flower, with regular petals; vigorous and decidedly good.

Le Rhône.—Vermilion it is described as, but certainly not the vermilion of artists, which I have never seen in any Rose; freed bloomer, tolerably free grower, and a good garden sort.

Mrs. Wm. Paul.—Purplish-red or crimson; full generally and well shaped; habit free. I saw this in bloom in the forcing-house in spring, and in the grounds three weeks ago, so it may be considered a true Perpetual, which too many so-called are not; *Madame Boll*, for instance.

Henry IV.—Another Rose somewhat the colour of the last, but scarcely so large and double. It is, however, a late bloomer.

Vainqueur de Goliath.—Brilliant red or crimson, shaded deeper. I am told that this is a first-rate Rose. Messrs. Wood describe it as the best flower of the season. The habit is vigorous and good.

Madame Alfred de Rougemont.—White, tinted, incorrectly described as the "shape of the Cabbage Rose." It appears to me to be really a Hybrid Noisette. It is worth a trial for its colour; good whites are scarce.

BOURBON.

Louise Margottin.—Lighter than Louise Odier, and every way excellent.

Those cultivators who have not yet given their orders had better not defer any longer. The finest plants are being lifted every day in large numbers, and the run upon certain favourite kinds will speedily exhaust nurserymen's stocks. There is one encouragement, too, for the doubting to become growers at once—viz., a considerable reduction has taken place in the price of plants this season.—W. D. PRIOR, Hemerton.

RESTING ORCHIDS AND PITCHER-PLANTS.

I SHALL be much obliged for some information about the resting of Orchids that flower in autumn and winter. The rule given is, that as soon as the bulb is fully made, or the growth of the season completed, water must be gradually withheld until the growing season returns. Is this rule applicable to winter bloomers? For example: *Dendrobium nobile* formed its bulbs by the first week in August, and has been kept dry till now, when it begins to push the bloom-buds. Must it still be kept absolutely dry? *D. densiflorum* has rested nearly as long, till the fluting of the bulbs shows the effect of the long drought. It will bloom in February. Must it still starve till then? *Oncidium flexuosum*, at rest for these three months, has been forming its bloom-panicle nearly as long. *Ionopsis paniculata* (on a block) has been in flower for some six weeks, and I think would long ago have withered, if I had not frequently wetted it. This makes me doubt the propriety of a dry treatment for other species, either blooming or about to bloom. *Phajus Tankervillei*, and *P. Wallichii*, again, should these be now quite dry?

Would Mr. Appleby, to whose courtesy I am already much indebted for a solution of some queries, be so good as to give us a little article on the season, duration, and degree of rest-drought in winter-blooming Orchids, and the relation of the rest to the formation and maturation of flowers?

I wish, also, to be told, how those plants should be wintered which in summer delight in having their roots bathed in water? For example: *Nepenthes Rafflesiana*, which with other species, Mr. Dominy keeps standing, the pot nearly submerged, in a tank of water in the growing season; and *Philesia buxifolia*, which I was directed to keep in a saucer of water. I did not ask how long in either case, but I conjecture that both the stove and the greenhouse boy plants require rest, and ought now to be standing in a dry state. Please to tell me the right in my conjecture. The condition of the roots should be a guide for the treatment of the plants. The Orchids

You cannot see the flowers of these plants, and you not only lose the beauty and lovely flower which this great natural order produces, but are bent upon making yourself acquainted with the best modes in practice for bringing up a satisfactory floral display. That you may be able to do this, the benefit of my practical experience we shall

reply to your remarks in a way which we trust will be generally applicable to the many other amateur growers who are beginning to found collections.

As a general rule, all growers must bear in mind that this tribe of plants, like all others, must have a season of growth and a season of rest. Unlike, however, almost all the other families of plants under cultivation, this one may be subjected to very severe drought without the systems of many of the plants being materially injured. A corresponding degree of excess in moisture, if aggravated by cold, would be fatal in most cases. What all Orchid-growers have to study, is the maintenance of the proper balance of moisture and drought at the different seasons of growth and rest. It is very easy growing a collection of this kind of plants, many people say. So it is; but it is one thing keeping plants in life, and another thing cultivating them to a high state of excellence. Now, I maintain that next to keeping the houses at a temperature suitable for the well-being of the class of plants growing therein, are the comparative degrees of drought and moisture, both for root and "branch," for encouraging successful growth, and floral development.

There has always been, and always will be, some little difficulty in explaining the precise treatment necessary for any given species or variety of plant, because in the first place no two men grow them in exactly the same ingredients. Some adopt ordinary drainage in the make-up of their compost, and ply the watering-pan more cautiously; others, again, give ample drainage, so that water may be poured upon the plants almost at any time; and both may be very successful cultivators. One remark may, however, be made in passing, that whenever the compost becomes a sodden mass where air cannot freely circulate, the plant will lose every day afterwards, however cautiously treated. There can be no two opinions about this. A free circulation of air amongst the roots is at all times highly necessary to attain success.

All *Dendrobiums*, from *nobile* upwards, require a season of rest varying from four to two months. But for all this it is not to be supposed that they must during that time be kept dry at the root. Certainly not. A season of rest, as I would have it understood, is a gradual diminution of temperature, and a proportionate restraint in the supply of water. *D. nobile* will live in a greenhouse temperature, even supposing it should occasionally fall to 36° in severe weather, with impunity. Little or no water during such a period may be given, and flower-clusters will show themselves on the well-ripened wood at every eye. *Densiflorum*, on the contrary, if subjected to such treatment for any length of time, would die; but it again will winter well in a temperature that never falls below 40°. Some of the more rare ones—such as *Farmeri* and *onosmum*, must not even be reduced so low, but all will flower much better if set in a house with a minimum temperature of 50°, and the atmosphere kept comparatively dry. Thus, "*ORCHIDOPHILUS*," and others will see that some Orchids will live and bloom to advantage in 36°, and all the race of *Dendrobies* in houses from 50° downwards. Whenever there is too much appearance of shrivelling in the pseudo-bulbs, then want of water is the cause. The party in charge must learn to have his eyes open to administer a remedy when any flaw occurs. As to *Oncidium flexuosum*, with pseudo-bulbs matured, and showing bloom-panicles, it should now be in a temperature ranging from 50° to 60° in the night, according to relative temperature out of doors, and moistened whenever it appears dry. *Ionopsis paniculata* has been correctly treated. All block plants must be watered when dry, at whatever period of their growth. If they are allowed to shrivel it will take months to make up the loss. *Phajus Tankervillei*, and *P. Wallichii*, are both terrestrial Orchids, and should be dry at no season. Now they are showing their flower-spikes, and may be either grown in a temperature of 50° or 60° to suit growers, but it is not wisdom, even in those wishing to retard them for show, to subject them to a temperature lower than 45°.

Phalenopses, *Vandas*, and *Xerides*, again, coming from such a warm region, are better never to be in a temperature lower than 60°, although in very severe weather it might fall to 55° without doing the plants any harm. Moisture here must also be regulated according to the systems of the

plants absorb it, and neither more nor less ought to be given, or withheld.

From these remarks it will be observed that I have mentioned two great fundamental points in culture—a proper and relative degree of heat, and a proper and relative degree of moisture. There is yet one other which is of the utmost importance to be observed, and that is the keeping all plants as near the glass as possible. Let these three points be intelligently observed and acted upon, and the rest will follow.

The roots of all Pitcher-plants, and other bog plants that usually stand either in saucers or tanks of water during the season of rest, should only be supplied when the saucers and other receptacles become dry, and then only moderately. We have a plant of *Rafflesia* just now with immense pitchers, and leaves about 20 inches long—not a naked-stemmed plant, but clothed to the pot-rim with leaves—which is treated as above recommended. Little weakly plants of *Sarracenia*, *Philasias*, &c., are all the better of being plunged into pots two sizes larger than the one they are growing in, and the interval filled up with moss, firmly put together, which is kept constantly moistened. This is better for this style of plant than placing them in saucers of water.—G. A.]

PROPAGATING ROSES BY CUTTINGS.

I HAVE a good collection of standard Roses. Could I rear some dwarfs from them the same as Gooseberries and Currants are reared in the open garden? I have an old Cucumber-frame—where the Cucumber vines died off about three weeks back—would a few cuttings grow in that? J. CHOYCE.

[The great majority of Roses strike freely enough in the way to which you refer. The best time to put the cuttings in is about the middle of October. Good strong firm cuttings should be selected from 9 inches to 1 foot long, with just a heel of the previous year's growth. The leaves should be removed from the bottom half of the cuttings, but all the rest left on. They should then be put in up to the first leaf left, and made firm in the soil with the foot, the same as is usually done with Currant cuttings. They will callus before winter, and root in the following season, and make nice little plants. The best place to put them is in any light, dry, common garden soil where they will escape the midday sun. It is not, however, yet too late to make a successful attempt, choosing strong well-ripened growths and preparing the cuttings as described above. The shelter of your Cucumber-frame will be a great advantage to them; and if the winter be mild they will so far callus, and if lifted and put into a little bottom heat in spring they will root. There is not, however, that certainty as regards the results of the operation when delayed till now as would have attended it earlier in the season. We wish more of our fine Roses were so propagated, and grown as dwarfs instead of being hoisted on to the top of an unsightly stem to look like a mop.]

A NEW CONSTRUCTION OF SMOKE-FLUES.

IN THE JOURNAL OF HORTICULTURE I see there has been much discussion as to the two systems of heating plant-houses—by hot water, and the old way by smoke flues. On a large scale no doubt the hot-water mode is the better, although more expensive in the erection, and afterwards in fuel and renewing boilers, &c. For small houses heating by smoke-flues is the best. They are sometimes "rickety," and give out smoke; this is often the effect of bad materials, and their not being properly seen to. Now, I think it is possible to improve them by making the sides of the flues of long pieces of clay (call them clay planks), 20, 24, and 30 inches long, 9 inches broad, and 3 inches thick; in one end of these planks let there be a groove $1\frac{1}{2}$ inch wide and $1\frac{1}{2}$ inch deep. In the other end make a feather or tenon $1\frac{1}{2}$ inch long and 1 inch broad. This is what a joiner calls groove-and-feather. The sides when set up to be bedded in mortar, and before they are put into each other, the tenon to be coated with mortar, and after they are joined, the half-inch not occupied by the tenon to be filled up with mortar from bottom to top. The sides for the corners of the flues

to be right-angled or square, 14 to 20 inches long to suit the length of the flue, and that is the reason for giving the different lengths mentioned before.

As this flue is not so deep as those in common use, it should be wider—say 18 or 20 inches broad; the covers to be 18 or 20 inches long, 12 inches broad, and 2 inches thick, check-lapped in the common way. For sinking the flue opposite doors, common brick will require to be used, with flagstones for covers.

Upon the side of the house where the flue is far from the furnace, the flue might be blackwashed, which will give a greater radiation of heat; and large flower-pot flats, set on the flue here and there, and filled with water, will make the air of the house more humid.—W. T., *Aberdeenshire*.

GARDEN BOILERS.

It would be a great advantage to gardeners in general if the sensible article written by "W. W." page 408, had been rendered a little plainer by showing the connecting-pipe of the two boilers, and also the position of the flow and return pipes at their connection with the boiler.

If this should meet the eye of any boiler-maker who has manufactured the simple and excellent boilers described by "W. W." I am sure it would answer his purpose, as well as benefit the public, if he would advertise both the construction and price of such boilers; and with a view to promoting such a desirable object, I am sure "W. W." would receive the thanks of many if he would communicate with some known manufacturer to that effect.—T. L.

[I am sorry that I did not show the exact position of the feed, the junction, and the flow-pipes in my first sketch; but for the information of "T. L." and others I will now endeavour to furnish the requisite explanation.

There is a flange at the front end of 2 (page 410), to which is fixed the feed-pipe, and at the other end is the outlet, but on the opposite side of the boiler, and forming the junction to the upper boiler. At the front end of 3 is a flange in connection with the flow-pipe: consequently the flanges at the two front ends are on one side, and occupy respectively the coolest and the hottest position, and the other two flanges are on the other side of the boiler to them.

I am told that these boilers are what are called "steam chests" at calico-printing and bleaching works, and cost a very small sum—in fact, so little that I do not like to name it. I wish that some maker would advertise them in your pages.—W. W.]

ROSES IN POTS FOR GREENHOUSE—STRAW COVERS FOR PLANTS.

In answer to a correspondent, "L. E."

Teas.—Safrano, Devoniensis, Comte de Paris, Niphetos, Vicomte de Cazes, and Gloire de Dijon. *Noisette*.—Aimée Vibert and Solfaterre. *China*.—Mrs. Bosanquet and Fabvier. *Bourbons*.—Armosa and Souvenir de Malmaison. *Hybrid Perpetuels*.—Auguste Mié, Baronne Prevost, Géant des Batailles, Général Jacqueminot, Louis Peyronny, Caroline de Sansal, Madame Vidot, and William Jesse. If you are to order these plants, you will be wise to leave a little latitude to the Rose-grower after telling him what you want.

As to straw covers. If you can manage wood at first, such as those mentioned as in use at Keele Hall and Trentham, they would be more economical in the end. Mr. Fish uses straw because he cannot obtain wood conveniently. He makes most of these covers neatly, that they may be used for going over glass sashes, as well as over earth pits where there is no glass; but for the latter purpose some of the nicety may be dispensed with. As to the wood, pretty well anything is used, but new covers are chiefly made out of elm boards fresh from the saw, an inch thick and half an inch thick respectively. Of course, deal, larch, or Scotch fir would be better. We shall suppose that the covers are 6 feet by 4, and for this size we will require three pieces of one-inch-thick wood, 6 feet long, and from $3\frac{1}{2}$ to 4 inches wide, and eight pieces of the half-inch wood, 4 feet long and 2 inches wide. The men rip up these in a wet day. Then on stools or tressles place two of these long pieces square, at a distance

above three plantings has been consecutively cropped by me with Potatoes for sixteen years, part of the time only on the ridge-and-trench plan. Brussels Sprouts and Broccolis occupied the trenches; and they are now spreading nearly over the whole surface of the ground, so as to make it appear almost incredible to a stranger visiting the garden how and where the Potatoes could have grown.

FOURTH PLANTING.

Before I begin to write the description of this, I must thank an unknown brother bee-keeper who kindly sent me on the 16th of last April, a Stewarton bar-and-frame hive, filled with varieties of Potatoes from Scotland. Did they come from Renfrewshire? The idea of a bar-and-frame beehive being presented to one of the straw-hive and milkpan school like myself! thus trying to induce one, as it were, to become scientific! Nevertheless, the characteristics of the package were worthy of the kind-hearted Scotchman, who thus added the idea of future utility to present bounty. I beg to assure my unknown friend that I will, if I am spared, turn the hive to future account; and that I have sufficient command over myself not to dread the small end of the wedge, though, had I the time and the means at my command, there is no telling at how many scientific tangents I might fly off in that way. I am happy to inform a brother bee-keeper that my hives are populous and well provided with winter store.

To return to our subject. I cannot do better than quote their descriptions in the words of the giver.

"No. 1. *Rough Red*.—A relic of the olden time—the finest eating Potato known, and an immense cropper before the advent of the disease, to which it almost totally succumbed, being now nearly extinct in these parts—procured from an old farmer who has kept it pure for the last seventy years. Can only be grown now with any measure of success on moss or old lea ground.

"2. *Rough White*.—Another old esteemed variety.

"3. *Gryffe Castle Seedling*.—An excellent Potato of fine quality, a large cropper when well manured—a fortnight earlier than the succeeding.

"4. *Walker's Second Early*.—The very best the writer ever grew of the many sorts now classified as above, or as Scotch Regents in the South; fine quality, largest cropper, best for general crop.

"5. *Seedlings of 1882, from Flukes*.—This coarse yellow variety and the *Rough Red* the only sorts here that mature seed."

I thought I had planned how every foot of this garden was to be occupied previous to the above arrivals. I knew not what to do in an emergency like this, but the idea struck me of digging out a trench of soil a spit deep from between the rows of Asparagus, and filling it up again with fresh good compost, then sowing the Marrowfat Peas there, and, when the growth of the Asparagus haulm had sprung sufficiently, to peg it down within a foot or so of the soil in lines on each side, and then stick the Peas. Watered them well and often with liquid manure (house sewage). The pegged-down Grass afforded a natural mulching, and such a crop of Peas was the result as I seldom remember—so much ground gained for ever. When the Pea haulm was cleared away, the Asparagus did not cast any shade, and I do not much expect that we shall have cause to deplore a diminution of heads next spring—at any rate the Potatoes took the place designed for the Peas in the open quarter.

May 12th.—Planted the Scotch Potatoes. During their progress their tops made enormous growth, so much so, that I was obliged to stake and tar-cord them within bounds twice over. My man spoke dubiously about their being "all tops and no bottoms," and I used to appease him by telling him to rest his mind till we took them up, and that then we should see.

The *Rough Reds*, true to their description, in one day after the lightning and thunder experienced here about the beginning of October, became blackened with disease, and I took them all up on the first dry day about a week afterwards. They turned out to be a fine sample of Potatoes. The *Walker's Second Early* proved the bulkiest crop, 15 tons per acre. The *Gryffe Castle Seedling* threw the finest tubers, many of them "with laughter cracking both their sides"—jovial-looking fellows in rough jackets. At the time of their taking up we cooked specimens of them

all, and they looked white and well in the dish; but it was too early for them to be fine in their flavour: it would not be fair in me to give judgment on their qualities in that way before next February. I am sorry to say that the *Rough Reds* up to this present date, November 3rd, are half of them decayed with the disease. No other of the kinds have shown the least symptom of it, nor, I am happy to say, with the exception of the *Negro*, have any of the sorts which I have grown this year. There has been complaining in our streets by the slovens, who allowed their crops to remain needlessly long in the ground, about disease, but they get no sympathy from me. With the exception of the *Rough Reds*, the tubers from the north will be a great acquisition in this neighbourhood, for, being strong-toppers and of a disposition to crop, they will, particularly to the allotment-holders whose land is chiefly of a light and stone-brashy nature, be just suitable.

Some of the seedlings I have great hopes of, though, as they arrived to me in a small letter-envelope and weighed scarcely more than an ounce, I can for the present only judge of their peculiarities thus:—Four of the little tubers flowered with light pink blossoms; one with a dark pink blossom; three with white blossoms; and six gave no blossoms at all. Nine produced round Potatoes, two *Kidneys*, and three are *Fluke*-shaped. All are white but one kind, which has a pink crown and eyes, and which is also covered with the robin's-eye protuberances similar to the early *Walnut-leaf*. In form this is like its *Fluke* parent. I have them in careful keeping. Another promising seedling I also retain for next year's proving.

Having an hour's time or so to kill ere the *Woodstock* train arrived at the Reading station, I went to Sutton and Sons', and spent the time very pleasantly in viewing their collection of seeds, and in overhauling their Potatoes. I found them well up in the varieties both old and new. I wanted particularly to see the *Early King* in the mass, and I must say it runs out too much for my liking, being a mass of all shapes; it will require a careful selection of its handsomest seed annually to rectify this undesirable feature. Hamper after hamper was goodnaturedly hauled out and opened for my inspection, till I fairly apologised for the trouble I was giving, and then a rough-skinned white Potato came to view, a very magnet for me. It was labelled "Newest Regent Seedling," a first-rate-looking Potato, round, and not nearly so deep in the eye as the generality of the *Regents*, and the roughest-jacketed fellow I ever saw. Half-a-gallon of them are now reposing amongst my stores. Two sufficiently large for cooking were measured in; they boiled firmly mealy, having if anything a rather yellower tinge than their namesakes. Although too early for a true judgment to be formed they have the *Regent* smack, and I thought it to be of a finer farewell flavour. They will prove a late store variety, and for the cockneys, whose palates chiefly prefer the *Regents*, these will come in admirably.

Some of the finest *Regents* I ever saw, were grown this autumn at *Rushbrooke Hall Gardens*, near *Bury St. Edmunds*, by Mr. Wigg; and the crops of *Peaches* and *Nectarines* on the open walls, and the *Pears* and *Apples* both on the walls and on espaliers there, were a sight to behold. I believe Mr. Wigg had had a *Royal George Peach* tree with its crop photographed a few days before my visit. The largest of *Flukes* were being dug from the old dark sandy loam, (exactly similar to the soil in *Rushbrooke Hall Gardens*), in the garden within the walls of *Carrisbrooke Castle*, *Isle of Wight*, some six weeks ago; but the careful scrutiny and the contemptuous jerking aside which many of them underwent told a tale of disease, as I watched the operation from the ruins.—UPWARDS AND ONWARDS.

VULGARITY IN CUCUMBERS.—We never dreamt until recently of the existence of an aristocracy of appetite. We overheard in a market the following brief dialogue between an old woman and a little girl, while they were standing in front of a vegetable stand:—"Grandmother," said the little girl, "buy some of those Cucumbers." "No, my child," replied the lady. "Why not?" asked the little girl. "Because I should hate to be seen carrying them home, when everybody knows they are only a penny a-piece!" The little girl did not appear to appreciate the excuse.

CEPHALOTAXUS FORTUNEI AND CEPHALOTAXUS DRUPACEA.

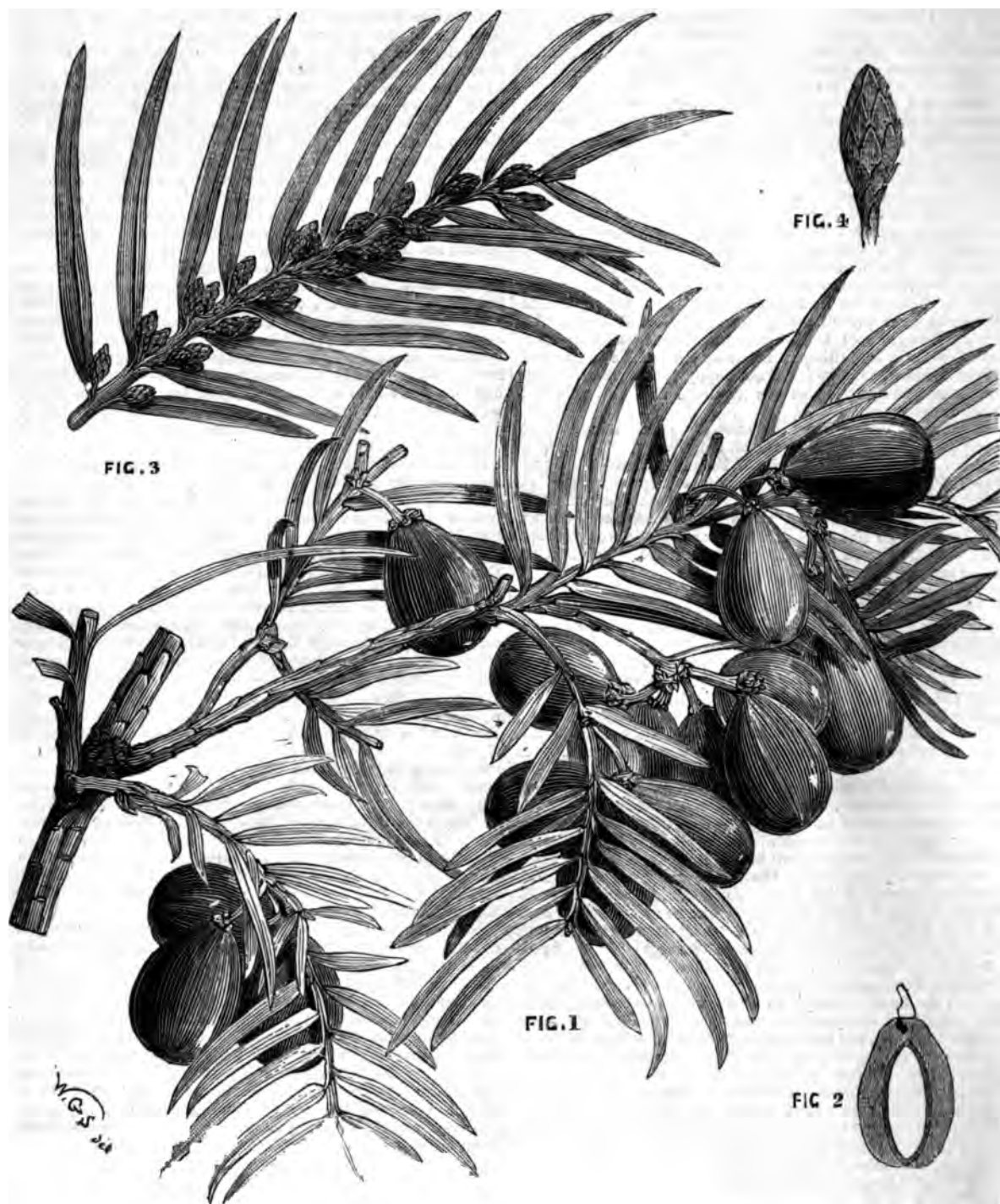
Fig. 1. Branch of *Cephalotaxus Fortunei* with fruit.Fig. 2. Fruit of *Cephalotaxus Fortunei*, magnified.

Fig. 3. Male plant with its inflorescence in the axils of the leaves.

Among the plants which have been introduced into our country we are indebted to the skill, enterprise, and good taste of Mr. Fortune, there are none which have more interested me, as an ardent admirer and extensive cultivator of hardy evergreen trees and shrubs, than the species of *Cephalotaxus* of which I have here

the pleasure of sending you fruit-bearing specimens. One of these is very appropriately named after its talented introducer, "*Cephalotaxus Fortunei*," and the other "*Cephalotaxus drupacea*."

Some confusion existed on the first appearance of these remarkable plants, the former having been rather hastily

pronounced to be the male, and the latter the female form of the same species; but as you will see by the specimens now sent, the impression originally entertained was erroneous. That they are distinct species, having their male and female inflorescence on separate plants, and are, in fact, dioecious, has been allowed.

You will perceive that I have sent you two specimens of each species—the female with its fully developed fleshy drupes, and the male with its incipient inflorescence in clusters at the axils of the leaves, which develops itself in the spring and scatters its pollen around.

Both *C. Fortunei* and *C. drupacea* are thoroughly hardy

and highly ornamental. They will grow in almost any soil, being amply furnished with large fleshy roots, which lay hold of the ground and extract abundant nutriment.

One very valuable quality which these fine plants possess is their thriving under the dense shade of other trees, thereby forming an undergrowth of glossy luxuriant foliage, and giving a rich dressy effect to places which otherwise would look bare and meagre. The landscape gardener indeed possesses in these oriental Yews materials which, judiciously handled, cannot fail to produce a change of no ordinary character in our ornamental grounds.

Mr. Fortune found them both in the northern districts of



Fig. 1. *Cephalotaxus drupacea*. Female plant with its drupes. | Fig. 2. Male plant with its inflorescence.

China, *C. Fortunei* attaining the height of 60 feet, and *C. drupacea*, which is of much more compact and dwarfer habit, that of 30 feet. I believe I am correct in saying that they are both indigenous to China and Japan.

The specimen plant in our nursery of *C. Fortunei*, from which I cut the branch, is now covered with purplish plum-shaped fruit or drupes, of which there cannot be less than three thousand at the present time, and is altogether a most attractive object, as its gracefully pendant slender branches are actually weighed down with the enormous clusters of

purplish berries, contrasting well with the long, linear, lance-shaped leaves, which are of a peculiarly rich lively green.—ROBERT PINCE, *Exeter Nurseries, Exeter*.

[Excellent as our figures are, they necessarily convey a very inadequate idea of the fine effect produced by the great profusion of beautiful drupes with which the branches are literally studded, and we can quite conceive what the appearance of a tree described by Mr. Pince must be.—EDS. J. or H.]

CENTAUREA ARGENTEA AND

At page 372 of THE JOURNAL OF HORTICULTURE, Mr. J. Robson seems to suppose that there are more sorts of the Silvery-leaved Centaureas in cultivation as bedding-out plants than the two mentioned above. No doubt there are some beautiful sorts not yet brought out as bedding plants. I can look back through forty years and recollect several

CENTAUREA CANDIDISSIMA.

such, but the above two sorts are all that I know at present to be used as bedding-out plants, or as conservatory ornaments.

What Mr. Robson quotes as *gymnocarpa* is only *argentea*, and the *ragusina* is only *candidissima*.

As to the rival merits of the two plants both are exquisite

gema, but any one who may have cultivated both plants to a large size as conservatory ornaments, cannot, I think, hesitate in preferring *argentea* to *candidissima*; and I am not sure, or very decided, which of them will ultimately become the greater favourite as a bedder. The two plants must both be seen of a large size before their merits can be properly appreciated.

I cultivate both sorts extensively, and they are both so beautiful, yet so different in their habits, that it is difficult to say which one likes best when planted out. The only rival they have is *Cineraria maritima*, which has merits quite equal to either of them.

We had a ribbon-bed here this season which was highly admired. It had a central row of the two *Centaureas* and the *Cineraria*, with a row all round of *Purple Orache*, and outside that a row all round of *Stachys lanata* (another hardy white-leaved gem), then next the grass a row round of true *Lobelia speciosa* from cuttings, the only way that can be relied upon for obtaining it true. A better edging would have been the *Arabis albidia variegata*, about which another correspondent in the same page makes similar mistakes as does Mr. J. Robson about the *Centaureas*. My experience of the *Arabis* is, that the one called *albidia variegata* is whitish-sulphur in the spring and yellowish-sulphur in autumn, just as *Bellis aucubefolia* becomes green in summer and beautifully variegated in autumn and winter. We cultivate two sorts of the variegated *Arabis* here, the above and the *lucida variegata*. This is more yellow than *albidia variegata*, and is easily known from *albidia*, which is covered with pubescent hairs, whilst *lucida* has a smooth, bright, shining foliage.

I trust the above will set bedding-plant-cultivators right about these valuable and most useful plants.—JOHN SCOTT, Merriott Nurseries.

SOME GARDENS WORTH SEEING.

SHERBORN.			
Name.	Proprietor.	Gardener.	Station.
Hawstone	Viscount Hill	Mr. Nieman	Freece
Acton Reynald	Sir Vincent R. Corbet, Bt.	Mr. J. Anderson	Yorton
Leaton Knolls	A. Lloyd, Esq.	Mr. J. Wilson	Leaton
Sundorne Castle	Lady Brinkman	Mr. King	Shrewsbury
Apley Castle	St. John B. Charlton, Esq.	Mr. Warrender	Wellington
Acquale	Sir Thos. Boughey, Bart.	Mr. J. Lascelles	Newport
Lillehall Abbey	Duke of Sutherland	Mr. W. Elliot	Newport
Condover Park	T. C. Owen, Esq.	Mr. Middleton	Condover
Walcot Park	Earl of Powis	Mr. G. Bond	Minsterley
Halston	Mrs. Wright	Mr. Galloway	Whittington

—J. E.

WORK FOR THE WEEK.

KITCHEN GARDEN.

TRENCH, dig, and ridge-over every spare inch of ground whenever the weather will permit these operations to be advantageously performed. This is particularly to be observed in gardens the soil of which is of a clayey nature. *Cauliflower*, give air freely to these, and also to *Lettuce* plants under glass. Indeed, the sashes should merely be used to exclude frost, and to throw off rains, for the plants will do all the better in spring if kept hardy and stocky over the winter. *Celery*, take advantage of the first dry day to earth-up closely any that may have outgrown the previous earthing-up, and be prepared to protect the ridges in case of severe frost. Dry stable litter answers very well for the purpose; but where they can be procured, straw or reed shutters are preferable, as being more easily applied, and causing less litter, and they are also useful in excluding wet. *Peas*, those sown on a warm border, and also the Broad Beans sown at the same time, as advised, will now be peeping up, and should have the surface soil stirred about them, and a covering of decomposed leaf mould laid over the rows, and also, in the event of cutting winds prevailing, some branches of spruce fir or birch stuck in on the windward side will be useful. Gravel walks should come in for a share of attention in sweeping and rolling. Coal ashes are an excellent material for the back walks, as they bear the winter traffic well, and are always pleasant to walk upon. If frosts set in let the manure necessary for the whole of the spring cropping be wheeled out, laying it in heaps either on the spot where it is to be used, or as near as possible to it. What is not required for immediate digging should be piled in small mounds and soiled over to prevent fermentation. Take the

opportunity of bad weather to forward the making of labels for the various crops, tying mats, cleaning nails, preparing shreds, and looking over stores.

FLOWER GARDEN.

Flower-borders should now receive a good top-dressing with some well-prepared compost. This should be forked in, and the surface of the borders left as rough as possible, which will give them a fresh appearance, and be of great service in pulverising stiff soils by the action of the frosts of winter. Thus the soil will be reduced to a more mellow state for spring operations. The weather is still favourable for executing alterations, and where these are in hand they should be prosecuted with the greatest possible dispatch. Planting or the removal of large trees or shrubs cannot be finished too soon, for it is of the utmost importance that the plants should be afforded some chance of making fresh roots before the cutting winds of March arrive. See to even small plants being secured against the wind, for these are often greatly injured by being blown about after planting, which a small stake and a few minutes' work would prevent. Standard Roses, which by the weakness of their shoots and the paucity of their blooms this season, are showing evident symptoms of decay, should have all the surface soil taken off down to the roots, and all the suckers removed, after which, a thick coat of well-rotted dung should be laid round them, and covered with a portion of the soil. Tea-scented, China, and other tender Roses that will not stand the severity of our winters, should now be protected by strewing a good thickness of fern, or any other dry material amongst the stems of the plants; this, with the addition of some spruce fir boughs stuck all over the beds will afford them all the protection they require. Those varieties which are budded on the standards may be easily protected by tying on a few furze branches round the head, securing the whole with a strong stake to protect it from the boisterous winds of winter.

FRUIT GARDEN.

Prune, stake, and tie *Raspberries*, and mulch with some light manure, which may be lightly forked-in in the spring, as it is imprudent to dig deeply about them. If any transplanting or root-pruning of fruit trees has yet to be done, let it be attended to without further delay, and see that those exposed to the wind are securely staked before leaving them. Also, let the ground be prepared for fresh plantations, and the trees planted as soon as possible. Fruit trees are injured by the accumulation of moss and lichen on their branches. Where the hand cannot reach it, a dashing of lime will effect its destruction.

GREENHOUSE AND CONSERVATORY.

We have already alluded to the ill-effects of humidity and stagnant air in plant-houses, as evils at this season to be guarded against most particularly; but these are of minor importance compared with one of our own creation, evidence of the existence of which we not unfrequently see in the drawn and unhealthy occupants of greenhouses. We allude to heat, which, judiciously applied, is of course of the first consequence, but, employed without judgment, becomes a fertile cause of the evils above described. It must be borne in mind, that a spring or summer temperature without the sunlight of one or the other, is altogether an anomalous state of things, and one which cannot be consistently pursued with objects so susceptible of such influences as plants. Above all, high night temperatures should be avoided. We are convinced by experience of the value of the practice of employing night-coverings, and of thus dispensing in a great measure with the use of fires. The leaves of *Camellias*, *Oranges*, &c., are liable to a dark scum. This should be cleared away by a sponge at this period, especially as a portion of the interest in pot plants depends on cleanliness both with regard to the leaves and the pots. While the principal collection of *Chrysanthemums* is in bloom, a selection should be made of the best and most useful for distinctness, and succession of sorts.

STOVE.

Do not encourage any fresh growth among the plants at this season; rather aim at that kind of routine management which will serve to consolidate the growths already made, and to develop the blossoms of the late-flowering plants in a proper way.

FORCING-FIT.

This is a good period at which to introduce a good quantity of shrubs and bulbs for forcing purposes. Azaleas, Daphnes, Persian Lilacs, Moss and Provence Roses, Sweetbriars, Honeysuckles, Rhododendrons, Kalmias, Ledums, Rhododas, the more advanced Hyacinths, Narcissus, and Tulips, may now be fairly started. A sweet bottom heat of 80° maximum, and a top heat of 85°, will be necessary, whatever the structure.

PITS AND FRAMES.

Look well to those containing stores for next summer, and have efficient protecting material always in readiness, with which to cover them whenever the weather is unfavourable.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

TREMENDOUS gales and rain, with skiffs of snow, have much lessened out-door work. We have taken up some more Seakale and Rhubarb for the Mushroom-house. Earthed a piece of a Mushroom-bed, and spawned another piece; raked leaves when the wind and wet would permit; trenched or began to trench ground; attended to all the vegetables coming on as mentioned in previous weeks, giving plenty of air to Cauliflowers, Asparagus, Lettuces, Endive growing, &c.; and when too stormy for the men to work usefully or comfortably out of doors, set them to break up wood, make straw covers, point sticks, and wash pots, as we never like to see pots standing out of doors in winter. Even in sheds they are best washed clean, so as to be ready for use. We once had a system of fines, but gave up when no one could be fined but ourselves; but we daresay we shall have to start again. Amongst fines none could be more legitimate than those making people remember who put a plant into a dirty pot, left pots standing about everywhere, laid pots down in a heap of all sizes, or when moving small pots took too many at one time as a rope between the hands, to the danger of cracking or breaking several in the centre of the rope. As to pointing small sticks, it is amusing to see men detected making as many scrapes and cuts to form a point as if they were polishing an ivory bodkin. We recollect the late Mr. Joseph Knight insisted on such pointing being done with two strokes of the knife.

FRUIT GARDEN.

Much the same as in previous weeks. It has been too wet for planting out of doors. Tied Peach trees in house, and planted some Vines inside at back of a vinery to help to give those in front a little rest.

ORNAMENTAL DEPARTMENT.

Attended to plants in house, removing those which were fading, and supplying with fresh. Placed leaf mould and loam under cover for use. Cleared all the rubbish from the pleasure grounds. Removed Dahlias that had stood in a dry house for a fortnight with their stems down and tubers up, and plunged them in dry earth in a close shed behind the conservatory. So treated we have scarcely ever lost a tuber. We do not like placing them in earth at once, but like all moisture to be drained from the roots and stems. We generally leave the latter about 6 inches long, unless much frosted, and if damp has lodged and remains there the centre is apt to rot, and thus the buds may perish. If once thoroughly dried a little moisture afterwards would not hurt them. The bed of earth is generally covered with a rough stage crammed with Fuchsias, &c., for the winter. We once met with a fatal instance of overdrying Dahlia roots. An amateur had obtained a fresh supply of novelties, a sharp frost came on in an early autumn night. He and his man Friday went out late, cut over all the Dahlias, took up the roots with the large tally attached, and placed them close to a back fire in the greenhouse. When examined in spring the tubers had nothing but skins, and scarcely one grew. If the roots had been earthed-up a little in the ground, or merely treated as above, we do not believe that any such misfortune would have happened.

Take up the greater portion of Gladiolus, and put them in by the heels in a dry place to mature the tubers. Some of the tops are yet too green for that purpose.

The weather will have proved pretty well whether we

were right as to keeping bedding plants in old hotbeds instead of dry pits and frames. In the old hotbed we have suffered a little from damp, but from reasons several times given our plants are small, as we cannot take cuttings early without injuring the outline of the beds. A spare room with plenty of light is better for keeping such plants than a frame over an old hotbed, and, the place being dry, a little sprinkling of dry hay would keep out a great amount of frost. Some of our friends who have small orchard-houses without artificial heat, would find it much easier to protect their bedding plants there in winter than in damp old hotbeds, as the air might always be dry and pure, and in severe weather it would be easy to cover them, and far less covering would do, and in continued frost and dull weather it might remain on for a good while. The great secret in keeping such plants when in darkness is to insure as much dryness and coolness as will be safe, and yet arrest growth. These conditions secured, we have had Calceolarias and Scarlet Geraniums that never saw light for six weeks, looking as well as if they had been covered up only for a night. The inside temperature was little above 33°. If the temperature had been from 40° to 45°, we may judge what the result would have been. Many try to keep old Geraniums in their cellars, and fail because the cellars are too damp and too hot. They would succeed better with them in a garret, where there was some light, and where a little protection could be given to them in cold weather. Everything growing must have light. We have some Scarlet Geraniums which in beds averaged 2 feet in height, and 2½ to 3½ feet in diameter of head, so pruned back that from a dozen to twenty of them, with their roots, after being dipped in lime, were squeezed like a faggot into a nine-inch pot, and if we could keep these docked plants in spring, they would be larger next summer than they were last summer. Now, to keep these in the easiest way, the stems must not break before spring, but owing to the continued mild weather these faggots of plants are beginning to push little green leaves, hardly discernible as yet, but seen from their greenness, and after that the plants to be healthy will require more light than they would otherwise have needed. They would do exceedingly well on the floor of a spare room moderately lighted, whilst all the young plants from cuttings stood near the window. Growing plants must have light, it is of less importance for those at rest. The faggots of Geraniums before they break may be treated very much as we would treat a Dahlia root, or a Gladiolus.—E. F.

COVENT GARDEN MARKET.—DEC. 5.

The supply at this morning's market was unusually good, especially as regards vegetables, and the demand being also good, former prices were fully maintained. Fruit of all kinds is also plentiful, particularly Pines, which are more than sufficient to meet all requirements, and Apples and Pears. Foreign Hamburg Grapes are now over; but importations of White Grapes have come in from Portugal. Cobs have risen in price, the finest samples now bringing 100s. per 100 lbs. The only addition to the varieties of Pears previously reported is Beurré Rance, of which and of Newtown Pippin Apples, there are some very good samples.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples.....½ sieve	1	6	to	4	0	Mulberries.....quart.	0	6	to	0
Apricots.....doz.	0	0	0	0	0	Oranges.....100	4	0	10	0
Pigs.....doz.	0	0	0	0	0	Pears.....bush.	7	0	10	0
Filberts & Nuts 100 lbs.	60	0	90	0	0	dessert.....½ sieve	2	6	5	0
Grapes, Hamburgs lb.	1	6	5	0	0	Fine Apples.....lb.	3	0	6	0
Foreign.....	0	9	1	0	0	Pines.....½ sieve	0	0	0	0
Muscats.....	3	0	6	0	0	Pomegranates.....each	0	½	0	6
Lemons.....10s	6	0	10	0	0	Quinces.....doz.	1	0	2	0
Melons.....each	3	0	5	0	0	Walnuts.....bush.	14	6	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Asparagus bundle	6	0	to	10	0	Leeks..... bunch	0	3	to	0	0
Beans, Broad..... bush.	0	0	0	0	0	Lettuce..... score	1	0	2	0	
Kidney..... ½ sieve	0	0	0	0	0	Mushrooms..... pottle	1	0	2	0	
Beet, red doz.	1	0	1	6	0	Must. & Cress, punnet	0	2	0	0	
Broccoli bundle	0	0	2	0	0	Onions bushel	2	0	4	0	
Cabbage doz.	0	9	1	3	0	pickling quart	0	6	0	0	
Capotoms 100	1	2	2	0	0	Parsley bunch	0	3	0	4	
Carrots bunch	0	6	0	8	0	Parsnips doz.	0	6	0	0	
Cauliflower doz.	2	6	4	0	0	Peas bush.	0	0	0	0	
Celery bundle	1	6	2	0	0	Potatoes sack	5	0	8	0	
Cucumbers doz.	6	0	12	0	0	Radiolus doz. bunches	1	6	2	0	
Endive score	1	2	2	6	0	Rhubarb bundle	0	0	0	0	
Fennel bunch	0	2	0	0	0	Savoy per doz.	0	9	1	6	
Garlic and Shallots, lb.	0	8	0	0	0	Sea-kale basket	1	6	2	6	
Gourds & Pumpk., each	0	0	0	0	0	Spinach sieve	1	6	2	0	
Herbs bunch	0	3	0	0	0	Tomatoes ½ sieve	0	6	0	0	
Horseradish ... bundle	1	0	4	0	0	Turnips bunch	0	3	0	0	

TO CORRESPONDENTS.

EVERGREENS FOR COVERING A WALL (Orta).—We know no plant that covers a wall so beautifully as the old *Cotoneaster microphylla*. As a sub-evergreen *Jasminum nudiflorum* is a lovely plant, and at this dull season it is a sheet of yellow blossoms.

ROSES TO BLOOM IN WINTER (T. G.).—Unless you can cover your Roses with glass we fear you will not now get them to expand properly, unless the season prove unusually mild. You could protect them from slight frost by mats, frigi dome, or stout canvas. Your newly-received Roses will take no harm for two months if carefully heeled-in and secured against high winds.

OBTAINING HYDRANGEAS WITH BLUE FLOWERS (J. W. L.).—The following from the pen of the late Mr. Beaton was published in our columns some years since:—"There is one disadvantage in August-made cuttings well known to gardeners, which is, that the flowers of them come all of one colour, and that the same as that of the parent plant, whether it be blue or pink; but those made in February may be made to flower blue or pink at will. If the mother plant produced blue flowers in the former seasons, and you force it in February, cut off your cuttings as soon as they make three joints, and when they are rooted place them in a rich light compost, say one half leaf-mould or very rotten dung, and the rest of any good garden soil, they never fail to produce pink flowers; whereas, if taken from a pink-flowering parent, and after rooting growing them in strong yellow loam, with about a sixth part of iron filings mixed with it instead of sand, nine out of ten of them will produce blue flowers. We never could get an August-cutting to differ in colour from that of the parent plant. The reason seems to be that the juices of the parent plant have already, by a season's growth, formed the substance—or the organised matter, as physiologists call it—out of which flowers are produced, so that no after-treatment is able to counteract the effect; whereas cuttings separated from a plant at so early an age as when they only attain a few inches in length, and are then made to grow in iron rust and loam otherwise impregnated with iron, which is well known to favour the production of blue flowers in the Hydrangeas, the organised matter referred to is formed from juices impregnated with iron oxide, and so produces blue flowers. The intensity of the blue, we believe, according to the perfect oxidation of the iron. Chalk-water never fails to counteract this effect of the oxide on the flowers, as we have often proved here, so that, to give the fairest chance to the experiment of getting blue Hydrangeas, we would recommend the cuttings to be taken as early in the spring as possible, to strike or root them in red sand, to grow them in nothing but red loam and iron filings, according to the above proportions, and never to water them but with rain water; but we are not sure whether rusty water from hot-water pipes would not add to the success of the experiment—at any rate, this rusty water is not injurious to these Hydrangeas. In some parts of the country the natural soil will produce blue Hydrangeas, and in such places it is difficult to meet with pink ones; and, what is singular enough, the *Rhododendrons* will flourish in such soil, although apparently devoid of all traces of vegetable matter. There is also a kind of peat earth which invariably turns the pink to a blue Hydrangea, but all the peat that we have access to here does just the contrary. To have pink Hydrangeas next summer, let us, therefore, make our cuttings now from pink parents; and, if we wish them blue, we must take the cuttings at this season from blue-flowering plants, for we cannot alter the colour now."

DESIRABLE ACQUISITIONS (A Young Gardener).—Both free-hand drawing and mechanical drawing are useful to the gardener, but especially the latter, because it facilitates the plotting of beds in geometrical figures, ground plans, &c. Botany is not essential, but no gardener can practise enlightenedly unless he understands the physiology of plants and the rudiments of chemistry. Read "The Science and Practice of Gardening," published at our office.

VINERY AND PINERY (An Old Subscriber).—As far as we understand, you mean your flue to heat the chamber, and in the pit above it to grow the Pines. If so, the cast-iron plates will do admirably as a covering to the chamber. The sides of the pit might also be made of these plates if deemed desirable. The pit, we presume, is for the Pines, and will no doubt do well, as we presume the flues will give you enough of bottom heat. You state, however, that you intend the house chiefly for Vines, and to begin forcing them at the latter end of February. If so, to give justice to the Vines you should not have them nearer than 5 feet from stem to stem and spur-pruned. To make the best of both Pines and Vines you should have a double front to your house in winter, between which the Vines could be placed and kept cool in their dormant state, and could even be started there before being laid up to the roof. We advise you not to attempt too much. You have no chance to succeed well with Peaches against the back wall of such a lean-to house. The Pines would require too much heat for the Peach trees in winter. You might have such trees in pots and tubs, start and set the fruit in a cooler temperature, and bring them to such a back wall to swell and ripen; but even then to give flavour to the Peaches would require more air than would suit the Pines. By doing away with Pines you might have Peaches on the back wall, starting them gently so as to have the fruit set before the Vines were much moved, and the pit you could appropriate to Figs and other fruit trees in pots so low as not to shade the back wall. Keep in mind that if you cover the glass roof thickly with Vines, neither plants in the pit nor trees against the back wall will continue long fruitful and healthy. When Vines are 2 or 3 feet apart, gardeners get a good deal out of their houses as under-crops, but they have little in them when the roof is shaded all over. If 5 feet apart there will be a good amount of light that will reach the floor and the back wall.

ROUGH PLATE-GLASS FOR GREENHOUSE (Mrs. U.).—Provided you glass throughout, at the sides as well as the top, Hartley's rough plate-glass does not require shading for ordinary greenhouse plants. We do not think your mode of glazing would answer, as the parts glazed with 21 oz. glass would need shading if the sun shone powerfully upon them. Of course, if the sun did not reach the parts glazed with 21 oz. glass, that would do equally well with rough plate. We have no experience of the stove you name, yet we feel certain it would not suit you. A small saddle boiler, with two four-inch pipes running all round your greenhouse, would answer our purpose better than any slow-combustion stove, and you can obtain the oiler and pipes very cheaply by sending a rough plan of your house to a boiler apparatus manufacturer. He would send you an estimate for what you required, and give you an efficient apparatus for the sum necessary to obtain a stove large enough for your purpose, and which will be in every way the best that the boiler could be made for.

GERANEA EREBINA NOT FLOWERING (A Subscriber, Grimsby).—Your treatment is right, and we can only account for its not flowering by your keeping it in a close moist atmosphere, which is more conducive to growth than flowering. Place in a drier atmosphere, and give abundance of air and light as soon as the flowers begin to burst the calyx, but still keep the plant in a temperature averaging from 55° to 70°. We give ours the ordinary heat of a vinery, and by the time the Grapes are ripe the plant is in full flower. A specimen, 2 feet high and 4 feet across, is one of the finest plants for filling vases in drawing-rooms, they continuing in bloom a long time and coming in when flowers are scarce. We fear you have been supplying guano water in too strong doses; do not apply it next year, and give a plentiful supply of water, but let the plants be dry when watering. Too much water is against the flowering of this plant, as it hinders the ripening of the flower-stems.

GRAFTING MUSCADINE VINE (Idem).—You may graft the Vine on the old wood, taking off the rough outer bark and washing it so as to prevent any composition used for washing the stems penetrating into the wound. We have grafted them on the wood of the year when about half ripe, and on wood one, two, or several years old, and find success is certain in all cases when the operation is properly performed. Tongue or whip grafting is the preferable method. It should be done in the beginning of March, leaving a few eyes on the old Vine to draw the sap out or into the graft. We prefer an inching to grafting, which we have practised on the young and old wood indiscriminately. If you have the plant of Lady Downes' we would advise you to inarch it on the old Vine at the place required, deferring the operation until the Vine has commenced growth. It would take in about six weeks, when it might be detached from the parent and trained up alongside of the Muscadine, which would produce fruit, and be cut down when the graft was sufficiently grown to supply its place.

CUCUMBER FOR EXHIBITION (Idem).—Kirklee's Defiance, Long Gun, and Star of the West are all handsome, long, and good.

WALL BANSHEAN ROSES NOT FLOWERING (Signs).—Prune them back about one-third of their length and train the branches about 9 inches from branch to branch, so as to admit sun, light, and air. They ought to flower next year.

ROSES IN CASES (Idem).—Plant-cases are not too dark for *Rosa*. You might try Fabvier, Lucullus, Archduke Charles, and Infidélité de Liège, China Roses; and Devoniensis, Safrano, and Madame Bravy, which are Tea-scented. Mrs. Bosanquet (China) does well in a pot. They can be had from any of the Rose-growers who advertise in our Journal. We fear, however, if you have no place but a plant-case, that they would give you nothing but disappointment. They will flower well enough in your case, but they want light, fresh air, and thorough exposure to mature the growths made after flowering. If you have a cold frame you might grow them in it, only removing them into your plant-case to flower.

INSTRUCTION IN GARDENING (Mrs. S. F.).—The young man must be placed as an assistant under some head gardener. You had better ask some head gardener in your neighbourhood to take the young man. A small premium will have to be paid.

PRONUNCIATION (X. X.).—We fear that a phonetic dictionary would require another dictionary to explain it.

PROTECTING ROSES (A Subscriber).—Tiffany is a kind of cotton cloth not closely woven. It may be had at most drapers' shops, or you may obtain it from the firms who advertise in our columns. Gutta percha hoods, with a little moss put over the eye and the hood upon that, are a novel invention. We have never tried such a contrivance, and cannot say whether it would answer or not. We fear it would cause the eye to start into growth if kept on in mild weather; but it certainly would be a good protection in severe and inclement periods. If you try it we should like to hear of the result. For protecting Roses we have found nothing better than a little long dry hay wrapped loosely round the buds and stems. The hay does not look very neat, but it can be no eyesore to those who consider its use. The tenderest kinds of the Tea and China Roses may be taken up and stored away in moist earth under a fence, and the shoots protected by placing a covering of straw or any kind of dry litter over them in severe weather. If a frame can be spared to put over them, so much the better. They can be planted in the beds in March, and pruned at the same time. They will flower rather later, but in other respects be little worse for moving, and in some cases it does good.

PRUNING VINES (Q. Y.).—The system of close pruning recommended in our Journal, and alluded to by you, was for Vines in good condition. We would advise you to prune to the first round plump eye on the fruit-bearing shoot or spur. We make it a rule to provide for a crop; and when Vines show fruit but tardily, cutting to one eye—or even two, unless they are round and plump—is a practice that provides for appearance at the expense of produce. Our advice is, Prune to a full round eye, wherever it is situated; if it is the third or fourth no matter, but the nearer they are to the stem the better, as there is then no superfluous old wood appropriating to its own use that nourishment which would, were they pruned closely, be expended on the young wood and in perfecting the fruit. We fancy your border is wet, and the light to which the young growths are subjected not sufficient to cause the first leaves to be healthfully formed nor fully matured. Try longer pruning, and communicate with us again if no better results attend your efforts.

RICHARDIA WATERING AND POTTING (Idem).—Give it enough water to keep it fresh—that is, keep it drier by half during winter than when growing vigorously. Pot it in March, and keep it standing in a pan of water during the summer. It is an aquatic, and requires the soil to be kept moist at all seasons; but it flowers more freely by being kept rather dry in winter.

REMOVING A LARGE CEDAR OF LEBANON (S. G.).—Your best way will be to cut round the roots at the distance of about 4 feet from the stem, making a trench and cutting every root at that distance, or even nearer if there be few at that place. Then fill in the trench again and let the tree stand till next September, when it may be removed with a better prospect of doing well than if it were transplanted now. A good ball is useful; but a careful preservation of all the roots at the time of removal is equally so.

ROSES IN WINTER (E. J. B.).—The Roses you named will stand our ordinary winters without protection. A little dry hay may be wrapped round the buds in severe weather, and if it be tied on with matting the winds would not blow it off, and the garden would be kept tidy. Some people wrap the buds or heads in tiffany, which affords a slight protection, but is not better than the hay.

DESIGNS FOR FLOWER-BEDS (T. Andrews).—We never undertake to design or to plant them. In "Flower Gardening for the Many," you can have from our office free by post for five postage stamps, if find several designs from which you can select.

DESIGNS FOR PILLARS (W. N. G.).—Général Jacqueminot, brilliant red; de Sutherland, pale rose; Gloire de Dijon, yellow, shaded with red; Souvenir de Malmaison, flesh, edges bluish; Eugène Appert, shaded with crimson; Jules Margottin, bright cherry.

DESIGNS FOR GARDEN WALL (Moses Walker).—Procure a pot of phosphorus from a druggist and spread it rather thickly on thin slices of bread, in small pieces, in their haunts. Or arsenic made into a paste with lard, and spread on thin slices of bread and put in their holes, on kill them. These are poisons, and must be kept out of the way of fowls and animals. We would advise you to wash the trees with Compound at the rate of 8 ozs. to the gallon of water, which will be buds distasteful to the vermin, using the poison besides.

SAND versus YELLOW (Wye-side).—Both master and man are in a long and in part right. River or drift sand is quite equal to silver sand, or the striking of ordinary cuttings—as *Fuchsia*, *Geranium*, &c.—growing coarse-growing plants, those which are softwooded especially, sand, on the other hand, is indispensable for propagating *Heaths* or *Ants* as have fibres smaller than a hair. We have struck cuttings in drift sand; but when we can obtain silver sand cheaply, and have used to buy, we prefer the former, as we think it is the purest of all, as it is, fine grains of white quartz, which is very insoluble, yellow sand is more easily soluble, and is generally combined with iron should not despise pure river sand at our door for the mere fancy of purchasing what we could do without. Why not try the yellow silver sand, and thus solve the problem by the best of all tests—time?

TIME VINES IN JANUARY (B.).—In the first place you should cover the early viney with some kind of fermenting material—as leaves, &c., to the depth of 18 inches, on the 1st of January, and thus see the new year in earnest. Previous to this take off the 6 inches of dung and keep it away from them for the future. The temperature the first fortnight should be 48° by night, and 45° by day, with a sun of 10°. After that the temperature should be 45° by night by day, with a rise of 10° to 15° with sun. Continue this temperature till the buds begin to swell, then increase it 5° both by day and night, the time the buds break have the temperature 55° by night and 60° and allow it to rise 10° with sun heat. Up to this the Vines should be skidded twice daily with tepid water of the same temperature as the sand and every available surface kept moist. Air should be given at all possible opportunities; but after the leaves appear be careful to avoid draughts, which are extremely pernicious. Keep an eye on the border and when you find the heat declining add more fermenting material. If you could obtain some wood shutters and have them fixed so as to the border to keep in the heat and shut out the wet, they would be of assistance in keeping up the heat of your border. By the time the temperature is down to 60° at night and 10° higher in cloudy, and 15° or 20° in bright weather, with abundance of air circulation. Discontinue the syringing when the Vines are in flower, and up a rather moist atmosphere by sprinkling the walls, &c., twice morning and evening. Give a thorough syringing after the bloom is set, and this keep the air moist by sprinkling the walls and paths twice daily, till the time the Grapes change for ripening. At this time keep them drier, and give all the air practicable, as far as the temperature goes. You will stop the shoots at the eye above the fruit, stop all at the first joint, and that above the fruit the same. The laterals in bunches of Grapes will hardly push again; but if they do stop the first leaf, and serve the shoot above the bunch the same. After off all laterals that appear below the bunch, and stop that above the bunch the last formed leaf, and so on. When the Grapes are the size of a pea, and in doing this take out the smallest and those next to it, and leave them so that the berries can attain their full size without interfering themselves into irregular and deformed berries. The temperature should be 55° by night and 75° by day after the Grapes change and 60° at night and 75° by day prior to that whilst they are swelling. As Grapes are ripe remove the litter from the border, and in doing so be careful not to injure the roots of the Vines, for some of them may be cold and run into it. If, then, take away as much litter as is asibly be done without injuring the roots more than can be helped; give them from the burning rays of the sun, cover the border with a 6 inches or so of rich and rather fine mould. Too much air cannot be moved after the Grapes are ripe, and to insure the ripening of the move the laterals on the shoots, and should any difficulty be experienced in inducing the Vines to ripen the wood made, put the wooden over the border. This will promote rest to a great extent; but if not these wooden shutters, keep the air dry in the house, but not so to cause the Grapes to shrivel. A young beginner will do well to "Sanders on the Vine," and keep a sharp look-out for the valuable stained in the "Doings of the Last Week." Your late viney will similar treatment, but it will not be necessary to cover the border, anything like the same amount of artificial heat. If you want the ripe in August, start them in March; if in September, in April—they start naturally. We are always more than ready to reply to, but we do not undertake to teach that which can readily be by a perusal of our columns. We do not wish to discourage our correspondent, but to impress upon him the immense importance of gathering the that are stored around before he asks us for leaves.

BINE-BUDS INSERTED LAST YEAR (M. D.).—Providing your trees by, we see no reason why Nectarine-buds should not produce fruit started in Peach trees. We have seen Royal George Peach trees Nectarines or smooth-skinned Peaches on the same trees along shoots. Buds might be inserted in the way you have done, and shed branches be thus furnished with fruit-bearing branches. What the stems you put the buds into?

COVER FOR A FOREST-TREE PLANTATION (Lago).—If you want it to be as good as anything, only it likes dry ground. Perhaps could suit your stiff ground, or *Berberis aquifolium* might do, or also pretty well under other trees. If you prefer *Furze*, sow as soon as you can obtain it, which is often done by employing others to gather it from a common or waste where it grows.

GREENHOUSE, CONSTRUCTING ONE REMOVABLE BY TENANT (Henry Stapleton).—For a moveable house you will need no front wall. All you need do is to place a layer or two of stones or bricks for a foundation, and on this a plate of wood should be fixed. Into that, uprights 3 inches square and 4 feet long and the same apart, should be let by mortice and tenon holes, and they should be fastened with screws. Two feet from the bottom plate place a sill 1½ by 2½ inches, rebated for glass, between each upright at the ends as well as the front, only considering the doorway. You will further need a plate for the rafters to rest on at the top of the uprights. This should project sufficiently to allow of a spout being placed in front to carry off the water, or it would injure the Vines you propose planting. You will close-board the front and ends with three-quarter-inch boards (grooved), and if you have the board next the upright front glass made to work on hinges you will find it answer admirably for front ventilation. You will also need ventilation at the top of the house. The remaining portion of the front may be made to correspond with the rafters on the roof, and be glazed with 21-oz. glass, which is the description we recommend for the roof. The ends will, of course, be glass; 16-oz. glass is cheaper, and quite equal to 21-oz., but is sooner broken. The laps of the glass should be putted, for frost cracks and breaks a number of squares. The fine may be constructed with bricks. Two on edge would be deep enough; and if it were 8 inches wide, and stones used for bottoms and cover, and duly mortared, it would be a good fine. The furnace should be 2 feet long by 10 inches wide, and 1 foot in depth. The top of the furnace should be level with the bottom of the fine where they join (at the furnace); the fine may then run level, or be slightly rising to the chimney. The intention of carrying the fine all round your house is good, but you must take it along the front first, and along the back the last. Six-inch pot pipes would do quite as well as a fine. Whichever you employ the furnace will need building of fire-bricks, and they should be used about 1 yard along the fine, or the heat will break the stone or other covering, or pot pipes if they are used so near the furnace. We think you are misinformed that by building your house on slabs of stone without making much foundation, your landlord would have no claim. The right way is to have a plate of wood fixed to the foundation, and then the superstructure fastened to that plate by screws.

TRANSPLANTING RHODODENDRONS (A. M. A.).—The present is a very good time to transplant *Rhododendrons*, provided the weather be mild and the ground not too wet. A dry peaty soil is unquestionably the best; but they do very well in some kinds of sandy soil, and even soils apparently of an opposite character. The fact is, where the chemical ingredients they delight in exist, there they will thrive. Perhaps the worst place for them is a black bog too soddened with water; chalky soils are also objectionable. See an article on the *Rhododendron* in No. 114.

TRANSPLANTING WATER LILIES (Jago).—Any time in autumn or spring will do to remove them, taking care not to expose them to the drying atmosphere at the time of transplanting. It is best to take good large pieces 5 or 6 feet long or so, and if 6 or 8 inches in diameter it is not too much. The roots are soft and cut easily. You may safely cut your *Poplar* trees any time before February, but the chances are that you will not obtain such fine-formed upright stems again.

EVERGREEN SHRUBS FOR A SCREEN (H. C. Case).—As you want evergreens only, and but one plant of a kind for a space 25 yards long by 2½ wide, the list will go a long way towards including all the ordinary kinds in cultivation; but, supposing the border to be divided into three rows, the tallest being at the back and consequently thinnest, the next size in the middle, and the dwarfest in front but thicker, an arrangement something like the following will meet your case:—Beginning with the back row, which we will suppose to require twenty plants, you may have six *Hollies* differing widely from each other, common and *Portugal Laurel*, *Chinese* and *American Arbor Vitæ*, *Sweet Bay*, *Laurustina*, *Arbutus*, *Ligustrum lucidum* and *L. japonicum*, *Alaternus*, *Spiræa Douglasii*, *Evergreen Oak*, and common *Privet*. In the second row you may have two or three kinds of *Magnolias*, two kinds of *Phillyrea*, half a dozen *Rhododendrons* all differing from each other, one *Andromeda*, two *Junipers*, two *Escallonia*, *double Furze*, *Daphne pontica*, three or four kinds of *Box*, and the same of *Berberis*; *Aucuba japonica*, *Eucyonia japonica*, and some others. In the front row we would have *Eugenia Ugni*, *Kalmia latifolia*, and another kind; also an *Andromeda*, *Griselinia littoralis*, *Garrya elliptica*, *Desfontainia spinosa*, *Eurybia liliifolia*, *Cotoneaster microphylla*, and *G. Simmondsii*. Two or three *Heaths* and one or two *Colutes*, and in a favoured place an *Indian Asalea* might perhaps stand, besides which there are such plants as *Yuccas*, and sometimes *Coronillas* are classes as evergreen shrubs. The dwarfest species of *Berberis* is also entitled to a place in the front, and several other little shrubs might be added if wanted. We are sorry you did not include a few flowering deciduous shrubs amongst them, as their appearance when in bloom would have enlivened the mass. You may plant on a ridge if you choose, taking care that the plants do not lack water the first year; but, after being once established, they will do for themselves.

PROPAGATING CHESTNUTS CANDIDISSIMA (E. J. B.).—Give your stock plant a shift at once into a six-inch pot, and keep in a cool dry or airy place, and give no more water at the root than is really necessary to prevent its drooping. Early in March place the plant in your neighbour's stove, and when the side shoots are about 4 inches in length, take cuttings and insert in silver sand in pots as for *Verbenas*, and place in a gentle heat. Keep the stock plant in heat, and you may then take cuttings from it until the end of April.

STRAWBERRIES FOR FORCING (Anna).—The very best plan is to plunge the pots in leaves, litter, or earth under glass, and keep dryish and cool. For modes according to your circumstances, see page 398 in "Doings of Last Week." Most likely if you plunge the pots in a bed of earth, leaves, or ashes, and strew a little litter between and over the pots, the plants will be safe enough.

KEEPING GRAPES ON THE VINES (W. H. B.).—If you do not heat your greenhouse so much as to deprive the Vines of rest, a little heating in dull foggy weather is indispensable, not only to preserve your Grapes but the plants also from damp. Abundant ventilation and gentle firing in the daytime only, except when severe frosts occur, and then firing must be employed at night, is what we do with plants and Grapes in the same house. The Vines will not be injured in their bearing for another year by such treatment. You will prune them immediately the Grapes are out, and keep them cool during the next two months, never employing artificial heat to raise the temperature above 40°, nor allowing it to sink below 35°, in order to provide for the safety of the plants. It is not too late to cut large *Scarlet Geraniums* back in October. Their being in flower is immaterial.

MISS PLANT CASE (An Old Subscriber).—The maker is Mr. R. Stocks, 14, Archer Street, Kensington Park, London, W. A letter will obtain full particulars in reply.

NAMES OF FRUIT (R. C.).—Your Apple, of which you sent three specimens, is the Kingston Black. (*J. Wells*).—1, Van Mone Leon le Clerc (?); 2, Knight's Monarch; 3, Passe Colmar; 4, Beurre d'Arenberg; 5, Beurre Bosc, does not appear to do well with you; 6, Red Doyenné; 7, Vicar of Winkfield; 8, Not known. Apples.—1, Fearn's Pippin; 2, Hunthouse.

NAMES OF PLANTS (Coniferæ).—1, *Abies orientalis*; 2 and 3, varied forms of *Abies excelsa*; 4, *Pinus strobus*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

PRIZES AWARDED TO GAME FOWLS AT THE BIRMINGHAM SHOW.

IN our list of the prizes awarded at the Birmingham Poultry Show (p. 441), will be found the name of J. H. Williams, Esq., Spring Bank, near Welahpool, as first for Black-breasted Red Game fowls; as second in the Single Cock class for White Piles, Duckwings, and other varieties; and also second in Black-breasted Reds. Our list was copied from the official record; but we have since received information that those three awards were cancelled, and that the pens to which they were awarded were disqualified.

The disqualification, we are informed, was decided because the birds, although exhibited in the name of Mr. Williams, really belonged to J. Hindson, Esq., Barton House, Everton, Liverpool, one of the Judges of the Game classes.

No severe remarks are needed from us to intensify the feeling of reprehension generally felt upon this occurrence. Neither Mr. Hindson, who awarded prizes to his own birds, nor Mr. Williams, who allowed the birds to be falsely shown in his name, can be upon a bed of roses.

BREAKING THE RULES AT THE BIRMINGHAM SHOW.

IT is commonly believed that the rules and regulations of the Birmingham Poultry Show are so carefully and wisely compiled as to form a fit basis to guide all other societies of similar character throughout the kingdom. Exhibitors, therefore, naturally expect the Directors of the Bingley Hall Show to duly provide for the faithful and rigid observance of their own rules and regulations.

This year we find it announced that by a new rule the "privileged few," who can afford it, and choose to pay the high admission fee of 10s. on Saturday, November the 28th, will be permitted to view the awarding of the prizes to the cattle, sheep, pigs, &c, but adds expressly, "the poultry, however, will not be exhibited till Monday." So far so good; but such being the tenor of the rule, I indignantly ask, How the astounding fact arose that Captain Heaton, to whom both the Silver Buff Cochins cups were awarded on the Saturday, and his friend, Mr. Kelleway, the breeder of the greater portion of the Cochins fowls the Captain then exhibited, were permitted to view the Poultry Show on the Saturday, in flagrant violation of such arrangements?

Was it, as now pleaded, "a pure accident," or does it not rather appear as a turning of the golden key to the upper ten—in short, a very gaudy illustration in support of the old adage, that "kissing always goes by favour?" Until this direct anomaly of rules and practice is properly explained away, myself and many other annual subscribers to the Birmingham Poultry Show, certainly intend to erase our names from the annual subscription list; as evidently "big fish break the net," whilst the little ones are the only sufferers. If not accounted for, most certainly for the future we purpose remaining among the untrapped.—SMALL FRY.

BIRMINGHAM POULTRY SHOW.

IT is fit that as we grow older we should have some compensation for the loss of youth, and all the charms that are its companions—courage, confidence, elasticity, freshness, strength, and hope. Not the least of these compensations is success. When a man can look back on fourteen or fifteen years of chequered life to find them crowned with success at the end, there is a feeling of satisfaction and rest which is an indescribable relief. It is the fruition of

full equivalent. There have been the bud and the blossom, and the fruit is in store. Sidney Smith realised this fact when, at the end of his famous receipt for a salad, he says:—

"And then, though turtle's dear and venison tough,
And ham and turkey are not done enough;
Securely full, the epicure may say,
'Fate cannot harm me, I have dined to-day.'"

It is with societies as with individuals, success is the result of exertion, and is never so appreciated as when it has been striven for and attained with difficulty. But the feeling of rest we have described is of two kinds. There is that rest which, having attained a certain object, has nothing more to do—the purpose is accomplished. There is another which, having succeeded, has to maintain its position by constant care and exertion.

The originators and the present managers of the great Birmingham Show have had to realise all we have described. They have had their small beginning, their times of depression, their difficulties and doubts, dark clouds, so dark that their silver linings could not be seen; but they have persevered and have had success beyond anything they anticipated at the outset. It is, however, the success that requires constant exertion to maintain. Before one exhibition has closed it is necessary to begin to think of the next year. The Council are men of energy. They have added new classes. Implements, roots, and corn have all been introduced into competition. While these have been provided for there has been no diminution of the original prize list. We congratulate the public-spirited men who conduct this undertaking on the progressive success they so deservedly meet with. It is truly a great Show; and those who walk round Bingley Hall, admire the arrangements, and enjoy the sight, have little idea of the vastness of the undertaking, or of the constant labour and supervision that are necessary. The greatest novelty of the present year is a new gallery running the whole length of the building, parallel with the poultry bay. Another such must be erected on the opposite side and the effect will be very good; but space will still be wanted.

The popularity of this great Exhibition is progressive, and it would be hard to assign any limit to it. It has passed from the bare exhibition of stock, and has assumed a more attractive appearance. The taste with which the seedsmen's stalls in the gallery are decorated would do credit to an artist. Trophies appear in different shapes. Roots of almost fabulous size appear—*mirabile dictu*—as the product of one of the millions of minute seeds that fill a small bag. Beautiful steam engines, and implements of every kind, chronicle the progress of agricultural mechanism. We trust we shall be pardoned the digression. We will return to our poultry; but we could not forbear the mention of these accessories to the *coup d'aîl* of Bingley Hall during exhibition time—a sight which may, without affectation, be deemed unique. The constant progress of the Society, and the increasing popularity of the Show, are a well-merited reward to the originators. Nothing could be more unselfish than their enterprise, and Birmingham owes them a deep debt of gratitude. The crowded streets, the constantly driving trains, the overflowing hotels, and the busy shops, all contribute to form their ovation.

We have already stated in our columns that there was a considerable increase in the entries, and we are now enabled to say that it was not made up of inferior pens, but of excellent specimens. It will be our task to review them.

Dorkings stood first. The prize list published last week will have given the names of the successful. We will, therefore, review all the classes of the Coloured birds of this breed, giving as one proof of their excellence that fifty-four pens were mentioned in the list of awards. All the well-known names were there. Captain Hornby took first in both the classes for cock and two hens or pullets; Ladies Holmesdale and Des Vœux, Mrs. F. Blair, Messrs. Pott, Hewson, Drewry, and Dolby cannot be passed in silence. It was an exploit to take even a fifth prize, and those who were of necessity content with high and simple commendations may urge as a proof that they have excellent birds that they figured among the awards at Bingley Hall in 1881. The classes for Dorking Hens and Pullets were no exceptions, and they maintained the reputation of the breed. The condition and vigour of constitution of these birds

was matter of remark. The White Dorkings were weak in numbers as compared with previous years.

Spanish were very good, and afforded a triumph to Mr. Lane, of Bristol. That locality seems favourable to the breed; but we have nothing at present equal to the days of Davies and Rake. Mr. Teebay's and Mr. Rodbard's, nevertheless, deserve mention. The birds shown by Lady Holmesdale are very good, and will be better next year.

Our next notice will be of some of the best classes ever seen—the Buff *Cochins*; and to mention them is to record one of the greatest triumphs ever achieved—nothing less than two first, two second prizes, and two silver cups in the competition with cock and two hens, and cock and two pullets; second prize for two pullets; first for two Partridge hens; and second for three Partridge chickens, all gained by Capt. Heaton. They were not easily won from bad birds, but gained in the teeth of much competition against names so well-known as Messrs. Fell, Stretch, Gilbert, and Bates. Mr. Stretch, Mr. Cartwright, and Mr. Tudman deserved their prizes in Grouse *Cochins*. The chickens were better than the adults. The White *Cochins* are losing ground. Messrs. Chase, Lamb, and Dawson showed well, but the birds are not equal to those of the olden time.

Brahma Pootras are everywhere on the increase. Mrs. F. Blair and Mrs. Rothery showed beautiful birds. Mr. Teebay did the same successfully; while Mrs. Hargreaves, and Messrs. Fowler and Adams could have but high commendations, as there were no more prizes to award.

The *Malays* though not numerous were excellent, very near perfection. Messrs. Sykes and Ballance took all the prizes. The *Crève Cœur*s were not as good as we saw at the Crystal Palace some time back.

The Black *Hamburgh* class was a novelty and a success. We believe it is almost the first time they have had classes to themselves, and they justified the introduction by sending twenty-three pens of excellent birds. It was no mean competition that, after awarding four prizes, made seven high and simple commendations necessary. Messrs. Shaw, Royd, and Lingard headed the classes. One circumstance is a disadvantage in this class, and as it is evidently a growing class, it may be as well to mention it—the difference in colour makes no difference in judging, and White faces are disqualifications. The Golden-pencilled *Hamburghs* were excellent, and the pencilling of some of the hens and pullets such as we have seldom seen. The contest for the prize was a very close one. The Silver do not keep pace with the Golden. It must not be inferred that they were inferior birds, but we have seen them better. The class for Pencilled *Hamburgh* Hens brought but three entries. That for Pullets but nine. These are not enough to support the classes. Messrs. Munn and Beldon were the principal prize-takers. The Golden-spangled were very good, and the same may be said of the Silver. Mrs. Pettat, Sir St. G. Gore, and Messrs. Marlborough, Hyde, Kershaw, Dixon, Cannan, and Fielding all showed excellent pens, sixty-seven in number, and bringing twenty-six into the prize-sheet; but the Hen and Pullet classes were again weak in numbers, though excellent in quality.

Polands leave nothing to be desired in merit, and they are improving in numbers, but it is slowly. Mr. Adkins's Silvers are perfect. All the Blacks were highly meritorious, especially those from Messrs. Edwards and Smith. Mrs. Pettat's and Mr. Dixon's Golden were very good. The Varieties were not very numerous. Lord Guernsey took first prize for Cuckoos; Lady Aylesford second; and Mr. Lowndes third.

The *Game* pens were as usual filled with perfect specimens in every class. While we looked at the Black Reds, we thought them best; then we were disposed to think the same of the Brown Reds, and then we altered our verdict in favour of the Duckwings. Mr. Wood's cup-pen was a perfect one; so were the prize birds of Messrs. Williams, Juwys, and Dyas. Mr. Adams's Piles also deserve every praise. Mr. Fletcher's Duckwings were very good. Seventy-two pens deserved and obtained especial mention. Messrs. Stubb, Doncaster, Billing, Swann, Garlick, Adams, and Dawson headed them. The Piles were better than common. Here the hens and pullets, although of excellent quality, were deficient in numbers. Miss Charlton's pullets were beautiful.

Eighty-eight *Single Dorking Cocks* supplied thirty-two

mentions in the Judges' awards. It is impossible to give names throughout, our limits will not permit it, but we unhesitatingly record our opinion that it was the best class ever seen. Lady Holmesdale's victory was a great one in being first. Her ladyship repeated the exploit in the next class, a very good one of *Spanish*. All the *Single Cock* classes were well filled, as the list will show. They are not only attractive, but they are convenient to purchasers. The *Cochin* cocks were not behind the *Dorking*, nor the *Brahmas* inferior to the *Cochins*. The *Hamburghs* of all classes were excellent, and the *Polands* good. We almost think these classes contained better birds than the general ones.

The Gold-laced *Bantams* were not so good as the Silvers in markings, but they were better in comb. Several in the Silver class had imperfect ones. Mr. H. D. Bayly and Mr. Leno took all the prizes. The Black were highly meritorious—indeed, some of them were perfect. The Variety *Bantams* brought us a beautiful pen of *Cochin Bantams*, perfect in every particular; also some pretty Japanese.

This brings us to the end of the fowls, and we are glad of it.

Aylesbury Ducks did not show so numerously as we have seen. The first prize went to Mr. Smith, the three weighed 25 lbs.; second to Mrs. Seamons, 24½ lbs.; third, Mr. Fowler, 24½ lbs. It was a good class, eclipsed, however, by forty-three pens of *Bouens*, forming such a display of that breed as has been seldom seen. Not only were they good in colour, but they were treading on the heels of the *Aylesburies* in weight. Mr. H. Worrall, almost the father of the class, took first with 23 lbs., Mr. Statter second, 22½ lbs., and Mr. Shaw third, 22 lbs. It was in every respect a grand class. The Blacks were excellent; and the Various Ducks showed the beautiful Mandarin, the Brown and White Call, and the wild Duck; while the Ornamental Waterfowl showed Black Swans, Barnacle and Egyptian Geese, and Carolina Ducks.

The three first-prize White *Geese*, belonging to Mrs. Seamons, weighed 67 lbs., the second 62 lbs., the third 53 lbs. Young birds of the same breed—Mr. Fowler 52 lbs., Mr. Davies second 50 lbs. Grey and Mottled *Geese* afforded a triumph to Mrs. Fergusson Blair; that lady took first, 77 lbs.; Mr. Fowler second, 76 lbs.; and Mrs. Blair third, 70 lbs. In the younger birds the first prize weighed 63 lbs., the second 67 lbs.

The *Turkeys* were excellent. Our remarks have been so long that we shall be obliged to dismiss them with short notice, merely giving their weights, and remarking that Mr. Guy took three out of six prizes, Mrs. F. Blair one, and Mr. Smith two. The weights of the adults were 65 lbs., 61 lbs., and 58 lbs.; of young birds, 58 lbs., 45 lbs., and 44 lbs. It was remarked that no American *Turkeys* were shown.

Thus ended the greatest Show ever yet seen. The admissions on the first day were two thousand more than on the same day in the preceding year. The sales of poultry increased in like manner, £650 were taken on the first day.

It is unnecessary to add that every one was at his post; that the Committee were indefatigable; and that everything was done that could add to the pleasure or comfort of the visitors.

We gave a list of the prizetakers last week, and now append the commendations.

DORKING (Coloured).—Highly Commended, Rev. J. G. A. Baker, Old Warden Vicarage, Biggleswade, Bedfordshire; G. C. Whitwell, Tolson Hall, Kendal (Grey); W. H. Denison, Hardwicke Cottage, Woburn, Bedfordshire; J. Drewry, Newton Mount, Burton-upon-Trent. Commended, J. K. Fowler, Aylesbury. **Chickens.**—Highly Commended, Mrs. Arkwright, Etwell Hall, Derby; Right Hon. Viscountess Holmesdale, Linton Park, Staplehurst, Kent; Captain W. Hornby, R.N., Knowsley Cottage, Prescot; Rev. J. F. Newton, Kirby-in-Cleveland, Stokesley, Yorkshire; Sir St. G. Gore, Bart., Hopton Hall, Wirksworth, Derbyshire; Sir J. D. Wauchope, Newton House, Millerhill, Dalkeith, N.B.; Rev. T. O'Grady, Hognaston Vicarage, Ashbourne (Silver Grey); W. Dolby, Horse Grove, Rotherfield, Tunbridge Wells; A. Potts, Hoole Hall, Chester; C. H. Wakefield, Malvern Wells. Commended, H. Saville, Manor Farm, Rufford Abbey, Orleton, Nottinghamshire; Right Hon. Viscountess Holmesdale; Mrs. Arkwright; Rev. J. F. Newton; W. Dolby; J. D. Hewson, M.D., Coton Hill, Stafford; J. Drewry.

DORKING HENS.—Highly Commended, Mrs. F. Blair, Balthayock, Inchmartine, Incheure, N.B.; J. Hill, Bladon Castle, Burton-upon-Trent. Commended, Rev. J. F. Newton, Kirby-in-Cleveland, Stokesley, Yorkshire; Mrs. G. H. Cook, Hartford Hall, Northwich, Cheshire (Grey); J. D. Hewson, M.D., Coton Hall, Stafford (Coloured). **Pullets.**—Highly Commended, Right Hon. Viscountess Holmesdale, Linton Park, Staplehurst, Kent; Lady Sophia Des Vœux, Drakelowe Hall, Burton-upon-Trent; Captain W. Hornby, R.N., Knowsley Cottage, Prescot; Sir H. Des Vœux, Bart., Drakelowe Hall, Burton-upon-Trent; Rev. J. G. A. Baker, Old Warden Vicarage, Biggleswade, Bedfordshire (Coloured); Mrs. Young, Easington Vicarage, Stratford-upon-Avon (Coloured); C. H. Wakefield,

Malvern Wells (Coloured). Commended, Mrs. Seamons, Hartwell, Aylesbury (Silver Grey).

SPANISH.—Highly Commended, J. Garlick, West Derby Road, Liverpool. *Chickens.*—Highly Commended, Miss E. Biggar, Nethermilline, Moffat, Dumfriesshire; J. Smith, Little London Farm, Hillingdon, Middlesex; R. W. Boyle, Rosemount, Dandrum, County Dublin; J. R. Rodbard, Aldwick Court, Wrington, Bristol; J. Garlick. Commended, W. R. Bull, Newport Pagnell, Buckinghamshire.

SPANISH HENS.—Highly Commended, Right Hon. Viscountess Holmesdale, Linton Park, Kent; E. T. Holden, Walsall.

COCHIN-CHINA (Cinnamon and Buff).—Highly Commended, E. Musgrave, Aughton, near Ormakirk; G. Fell, Warrington; H. Bates, Harborne Heath Cottage, Birmingham. Commended, D. Causer, Oscott Villa, Erdington, near Birmingham; T. Stretch, Ormakirk; H. Bates. *Chickens.*—Highly Commended, Right Hon. Viscountess Holmesdale, Linton Park, Kent; T. Stretch, Ormakirk; C. Felton, Erdington, near Birmingham; C. T. Bishop, Lenton, near Nottingham; Captain Heaton, Lower Broughton, Manchester. Commended, Mrs. White, Broomhall Park, Sheffield.

COCHIN-CHINA HENS (Cinnamon and Buff).—Highly Commended, Mrs. White, Broomhall Park, Sheffield; D. Young, Radford Villa, Leamington; J. Shorthose, Shieldfield Green, Newcastle-upon-Tyne; C. T. Bishop, Lenton, near Nottingham. Commended, Captain Heaton, Lower Broughton, Manchester; C. Felton, Erdington, near Birmingham. *Pullets.*—Highly Commended, Rev. G. Gilbert, Claxton, Norwich. Commended, C. Felton, Erdington, near Birmingham; Captain Heaton, Lower Broughton, Manchester; Rev. G. Gilbert.

COCHIN-CHINA (Brown and Partridge-feathered).—*Chickens.*—Highly Commended, R. Adams, Harborne Heath, Birmingham. Commended, — Cartwright, Oswestry.

COCHIN-CHINA HENS (Brown and Partridge-feathered).—Highly Commended, — Cartwright, Oswestry. Commended, J. Shorthose, Newcastle-upon-Tyne.

COCHIN-CHINA (White).—Highly Commended, R. Chase, Birmingham. Commended, D. Causer, Birmingham. *Chickens.*—Highly Commended, F. W. Zurhorst, Donnybrook, Dublin. Commended, Right Hon. Viscountess Holmesdale, Linton Park, Kent.

BRAHMA FOOTRA.—Highly Commended, R. Adams, Birmingham; R. Teebay, Fulwood, Preston. *Chickens.*—Highly Commended, Mrs. Hargreaves, Reading (Dark); R. Teebay, Fulwood, Preston; J. K. Fowler, Aylesbury; W. L. Barclay, Leyton, London, N.E. (Dark); T. Pomfret, Preston. Commended, J. Pares, Chertsey (Light); Mrs. F. Blair, Inchmartine, Inchture, N.B.

MALAY.—Highly Commended, Miss C. H. Ballance, Taunton. *Chickens.*—Highly Commended, Miss C. H. Ballance; E. Leech, Rochdale; Master C. A. Ballance, Taunton.

CAVE COUS.—*Chickens.*—Commended, Mrs. F. Blair, Inchmartine, Inchture, N.B.

HAMBURG (Black).—Highly Commended, J. Dixon, Bradford. *Chickens.*—Highly Commended, E. Freer, Castle Bromwich, Birmingham; S. Shaw, Stainland, Halifax; F. Gabin, Birmingham; E. Smith, Middleton, Manchester. Commended, R. H. Nicholas, Malpas, Newport, Monmouthshire; W. W. Nicholls, Sale, Manchester.

HAMBURG (Golden-pencilled).—Commended, J. Robinson, Garstang. *Chickens.*—Highly Commended, J. Munn, Newchurch, Manchester; Messrs. Carter & Vallant, Foulton-le-Fyde, Lancashire; T. Craven, Bradford. Commended, J. Munn.

HAMBURG (Silver-pencilled).—*Chickens.*—Highly Commended, Right Hon. Viscountess Holmesdale, Linton Park, Kent.

HAMBURG (Pencilled).—*Pullets.*—Highly Commended, Mrs. W. Kershaw, Heywood, Manchester (Golden); J. Munn, Newchurch, Manchester (Golden).

HAMBURG (Golden-spangled).—Highly Commended, J. Dixon, Bradford. Commended, W. Kershaw, Manchester; H. Carter, Holmfirth, Yorkshire. *Chickens.*—W. W. Nicholls, Sale, Manchester; Messrs. Broadhead, Heywood & Coldwell, Holmfirth, Yorkshire. Commended, N. Marlor, Denton, Manchester; H. Carter, Holmfirth.

HAMBURG (Silver-spangled).—Highly Commended, J. Fielding, Newchurch, Manchester; Mrs. Pettat, Basingstoke. Commended, H. Beldon, Bingley. *Chickens.*—Highly Commended, W. Cannan, Bradford; G. E. Hardman, Rawtenstall, Manchester; Mrs. Pettat.

HAMBURG HENS (Spangled).—Highly Commended, H. W. B. Berwick, Helmsley, Yorkshire (Golden); H. Beldon, Bingley; J. Ellis, Kirkgate, Leeds (Golden).

POLISH (Black and White Crests).—*Chickens.*—Highly Commended, E. Smith, Middleton, Manchester.

POLISH (Golden).—Highly Commended, Mrs. F. Blair, Balthayock.

POLISH (Silver).—Highly Commended, J. Dixon, Bradford. Commended, W. Newcome, Bingley. *Chickens.*—Highly Commended, G. C. Adkins, Birmingham.

ANY OTHER DISTINCT VARIETY.—Highly Commended, R. H. Nicholas, Newport (Chinese Silky); Mrs. F. Blair, Balthayock (La Flèche). Commended, Right Hon. Countess of Aylesford, Leamington Spa (Cuckoo Dorking); Right Hon. Lord Guernsey, Leamington (Cuckoo Dorking).

GAME (Black-breasted Red).—*Chickens.*—Highly Commended, R. Woods, Workop. Commended, W. Cox, Derby; H. M. Julian, Beverley; M. Billing, jun., Birmingham; J. Holme, Knowsley, Prescott.

GAME (Brown and other Reds, except Black-breasted).—Highly Commended, M. Billing, jun., Birmingham; E. Burton, Truro; R. Swift, Southwell; H. Adams, Beverley. Commended, T. Statter, Manchester. *Chickens.*—Highly Commended, H. Snowden, Bradford; G. Clements, Birmingham; N. J. Cope, Barnsley.

GAME HENS (Black-breasted and other Reds).—Highly Commended, J. Wood, Wigan (Brown Red). *Pullets.*—Highly Commended, J. Stubbs, Lafford (Black Red); R. Adecock, Shustoke (Brown Red); W. H. Denison, Bedfordshire (Brown Red); J. Wood (Black Red); K. Parkinson, Lancashire (Black Red); J. H. Braikenridge, Bristol.

GAME (Duckwings, and other Greys and Blues).—Highly Commended, E. C. Gilbert, Penkridge. Commended, J. Doncaster, Lincolnshire. *Chickens.*—Highly Commended, J. Wood, Wigan; J. Doncaster, Lincoln.

GAME (White and Piles).—*Chickens.*—Highly Commended, Rev. G. S. Cruwys, Tiverton (Pile); J. Fletcher, Stoneclough (Pile); A. Guy, Eaton, Tiverton (Pile); F. A. Brotherton, Lancashire (Pile).

UNDESIRABLES FOR SINGLE COCKS.

Highly Commended, Lady S. De Vaux, Burton-upon-Trent.

Balthayock; Miss Wilcox, Bristol (Grey); Right Hon. Viscountess Holmesdale, Linton Park, Kent; Rev. M. Amphlett, Evesham; Rev. T. O'Grady, Ashbourne; J. D. Hewson, M.D., Stafford; Mrs. Rothery, Haslemere, Surrey; Miss J. Milward, Somersetshire; W. Dolby, Tunbridge Wells; Rev. J. G. A. Baker, Biggleswade, Beds; J. Drewry, Burton-upon-Trent; Rev. E. Cadogan, Warwick; Sir J. D. Wanchope, Dalketh, N.B.; E. Tudman, Whitechurch; J. Robinson, Garstang; J. Hill, Burton-upon-Trent; E. Shaw, Oswestry (Grey); H. B. Lee, Bowdley. Commended, Rev. E. Cadogan; J. Smith, Henley-in-Arden.

SPANISH.—Highly Commended, J. L. Lowndes, Aylesbury; H. Lane, Bristol; J. Garlick, Liverpool; R. Paton, Kilmarnock, Ayrshire. Commended, W. R. Bull, Newport; J. W. Smith, Oundle; T. Tatham, Kington.

COCHIN-CHINA (Cinnamon and Buff).—Highly Commended, F. M. Hinde, Lancashire. Commended, Mrs. White, Sheffield; J. Stephens, Walsall; C. T. Bishop, Nottingham.

COCHIN-CHINA (Except Cinnamon and Buff).—Highly Commended, R. Adams, Birmingham (Partridge); C. Felton, Birmingham (Partridge); G. Williams, Oswestry (Partridge).

BRAHMA FOOTRA.—Highly Commended, Mrs. Hargreaves, Reading (Dark); J. Pares, Chertsey (Light); R. Teebay, Preston.

HAMBURG (Golden-pencilled).—Highly Commended, Hon. J. F. Cliffr Butler, Abergavenny; J. Choyce, Atherstone; Mrs. W. Kershaw, Heywood; H. Beldon, Bingley.

HAMBURG (Silver-pencilled).—Highly Commended, Right Hon. Viscountess Holmesdale, Linton Park, Kent; C. M. Royds, Rochdale; H. Beldon, Bingley; J. Bennett, Gloucestershire. Commended, D. Harding, Middlewich.

HAMBURG (Golden-spangled).—Highly Commended, H. E. Embury, Leicester. Commended, G. Lingard, jun., Birmingham; H. Beldon, Bingley.

HAMBURG (Silver-spangled).—Highly Commended, Mrs. Wolferstan, Tamworth; J. Fielding, Newchurch; H. Beldon, Bingley.

POLISH.—Highly Commended, Mrs. Pettat, Ashe Rectory, Basingstoke (Golden).

GAME (White and Pile, Duckwings and other varieties, except Reds).—Highly Commended, E. C. Gilbert, Penkridge (Spangled); T. Carless, Nottingham (Duckwing); J. Fletcher, Stoneclough, Manchester (Duckwing).

GAME (Black-breasted Red).—Highly Commended, Sir St. G. Gore, Bart., Derbyshire; G. Wostenholm, Sheffield; J. Fletcher, Stoneclough; R. Woods, Osberton; E. C. Gilbert, Penkridge; S. Mathew, Stowmarket. Commended, G. Wostenholm, Sheffield.

GAME (Brown and other Reds, except Black-breasted).—Highly Commended, G. Clements, Birmingham; H. Adams, Beverley; E. Swift, Southwell; N. Grimshaw, Lancashire; T. Statter, Manchester. Commended, J. Wood, Wigan.

BANTAMS (Gold-laced).—Highly Commended, Rev. G. S. Cruwys, Tiverton. **BANTAMS (Silver-laced).**—Commended, Rev. G. S. Cruwys, Tiverton; Master R. W. Chase, Birmingham.

BANTAMS (White Clean-legged).—Highly Commended, Captain Wetherall, Loddington, Northamptonshire.

BANTAMS (Black Clean-legged).—Highly Commended, W. Cannan, Bradford; R. Brotherhood, jun., Chippingham. Commended, Miss F. Ridgway, Dersbury.

GAME BANTAM COCKS.—Highly Commended, Miss Crawford, Southwell; T. H. D. Bayley, Biggleswade; W. R. Lane, Birmingham; Mrs. J. Munn, Newchurch. Commended, F. Esquilant, London; H. Shield, Northampton.

DUCKS (White Aylesbury).—Highly Commended, Sir St. G. Gore, Bart., Derbyshire; Mrs. Rothery, Haslemere; E. Leech, Rochdale; Mrs. Seamons, Aylesbury. Commended, Messrs. Broadhead, Heywood & Coldwell, Holmfirth; R. H. Nicholas, Newport.

DUCKS (Rouen).—Highly Commended, Sir St. G. Gore, Bart., Derbyshire; Mrs. F. Blair, Balthayock, N.B.; T. R. Hulbert, Cirencester; W. Gannon, Thornton-le-Moors; T. Robinson, Ulverston; H. Worrall, West Derby. Commended, W. H. Denison, Bedfordshire; R. W. Boyle, Rosemount, Dublin; T. Statter, Manchester; T. Robinson, Ulverston.

DUCKS (Black East Indian).—Highly Commended, F. W. Earle, Prescott; J. W. Smith, Oundle. Commended, Mrs. Wolferstan, Tamworth.

DUCKS (Any other variety).—Highly Commended, J. Dixon, Bradford (Grey Call); S. Shaw, Halifax (Mandarin); G. Williams, Oswestry (White Call).

GEESE (White).—Highly Commended, J. Faulkner, Burton-upon-Trent. *Goosings.*—Highly Commended, W. Winterton, Hinckley (Improved English).

GEESE (Grey and Mottled).—Highly Commended, J. Dixon, Bradford; D. B. Davies, Cheshire. *Goosings.*—Highly Commended, J. E. Fowler, Aylesbury (Toulouse).

TURKETS.—Highly Commended, J. Coxon, Lichfield (Cambridgeshire); J. Smith, Grantham (Cambridgeshire). *Poult.*—Highly Commended, Right Hon. Lord Stanhope, Burton-upon-Trent (Dark); Mrs. Wolferstan, Tamworth (Cambridgeshire); Rev. T. L. Fellowes, Norfolk (Cambridgeshire); W. Winterton, Hinckley (Cambridgeshire); J. W. Smith, Oundle (Cambridgeshire).

The Judges were the Rev. R. Pulein, Kirby Wiske, Thirsk; G. J. Andrews, Esq., Dorchester; J. H. Smith, Esq., Skelton Grange, York; J. Hindson, Esq., Barton House, Everton, Liverpool; and Mr. Bailly, London.

PIGEONS.

The Pigeons were principally ranged in one of the galleries, and formed an excellent collection.

Almond Tumblers were first in the list, with a very keen competition, more especially between Mr. Elise and Mr. Eden for first and second positions. Mr. Stuart, of Glasgow took third with a good pen, the cock being rather dark.

In Carrier cocks (Black) Mr. Eden's first and second prize birds were excellent. In hens of the same colour the competition was close and the first-prize bird belonging to

Messrs. Siddons was claimed at £10 10s. Mr. Elze's second-prize hen merited her position. In both classes for Carriers of any other colour, single birds, Mr. Eden and Mr. Colley, of Sheffield took all the prizes with capital Duns, the former gaining both first prizes.

In *Powder* cocks, Red or Blue, the prizes went to fine lengthy Blues belonging to Mr. Fulton; while in hens of the same colour Mr. Eden was first with Blue, and Mr. Potts second with a good Red. In *Powder* cocks, Any other colour, Mr. Eden's famed White was first, Mr. Fulton being second with a good representative in a slaty Black; and in hens, Any other colour, the same exhibitors reversed their positions, with birds of precisely the same colours.

Balds and *Beards* formed two fair classes. Many of the birds, however, were rather defective in eye.

Mottled *Tumblers* were good, more particularly the first-prize Black Mottles. *Tumblers*, Any other colour, were an average lot.

Silver Runts took both prizes in the class allotted to them.

There was a good show of Red or Yellow *Jacobins*, Mr. Lawrence's first-prize Yellows being excellent. Mr. Esquilant's Reds were also good. In *Jacobins*, Any other colour, good Blacks were first, and Whites second.

White *Fantails* formed a large class, both prizes being awarded to Crested birds. In *Fantails*, Any other colour, Blues were first and Blacks second.

Trumpeters were divided into two classes—Mottled, and Any other colour. In the former class Mr. Shaw's extraordinary pair again stood clear of everything, this being the fifth successive year in which they have taken first prize at Birmingham—viz., twice when sent by their former owner, Mr. Mewburn, of Darlington, and twice by Mr. Shaw, a fact we believe never achieved by any other pair of Pigeons; and well they deserve their honours. In the latter class Mr. Oakes's capital Whites were first, and Mr. Shaw second with exceedingly good Blacks.

The *Owl* classes were, perhaps, inferior to none. That for Blue or Silver, although not very large, contained good birds, foreign Blues winning. In *Owls*, Any other colour, the collection of seventeen pens was characterised by the Judges as "a beautiful class." They were principally the small Whites, both prizes being awarded to splendid Whites. One of the birds in the first-prize pen was rather out of condition. The second were remarkably good young birds, and speedily changed ownership.

Nuns were a fair class, Black-headed taking the prizes.

Turbits were divided into Red or Blue, and Any other colour. Red took both prizes in the former, and Yellows in the latter. Mr. Shaw had both first prizes with excellent shell-crowned birds, while the second Reds were point-headed. A plain-headed yellow-barred pair received high commendation. Some good Blues and Silver were also exhibited.

Black *Barbs* only numbered two entries, and do not require especial notice. *Barbs*, Any other colour, were better represented. Mr. Edens's admirable Yellows were first, Mr. Stuart second with Reds, the hen rather thin, and long in beak, while Mr. Lawrence received high commendation for two good pens of rather young Yellows.

Dragoons, *Maggies*, and *Antwerps* were average classes.

In Any other new or distinct variety, *Satinettes* were first, Swiss second, and Black-tailed *Owls* third, notwithstanding the two classes for Owl—viz., Blue or Silver, and Any other colour, the latter containing Black-tailed *Owls*.

It is rather difficult to understand how they can be called Any other new or distinct variety, merely from having black tails, a variation in the colour of any part of the feather, it would seem, taking them out of the category of *Owls*, the properties of which they possess. We believe the same exhibitor won with the same or similar birds at Collingham a short time since in a like class, and as it places exhibitors in a dilemma the point should be settled whether they are correctly classified or not.

In addition to the prizes given last week, the following are the commendations:—

CARRIERS (Black).—Commended, E. Snow, jun., Birmingham; Messrs. W. Siddons & Sons, Aston. *Hens*.—Very Highly Commended, P. Eden, Salford. Highly Commended, E. Snow, jun., Birmingham.

CARRIERS (Any other colour).—Commended, T. Colley, Sheffield (Dun).

POWDER (Red or Blue).—Very Highly Commended, M. Stuart, Glasgow. *POWDER* (Any other colour).—Very Highly Commended, M. Stuart, Glasgow (Black). Commended, P. Eden, Salford.

BALDS.—Highly Commended, W. Woodhouse, Lynn, Norfolk (Black). Commended, W. Woodhouse (Dun).

BEARDS.—Commended, J. Fielding jun., Rochdale (Short-faced).

TUMBLERS (Any other colour, except Mottled).—Highly Commended, F. Esquilant, London (Yellow).

JACOBS (Red or Yellow).—Highly Commended, J. T. Lawrence, Everton. Commended, H. Morris, Kent.

FANTAILS (White).—Commended, G. H. Sanday, Pierrepont; M. E. Jebbing, Newcastle-upon-Tyne; F. Elze, Baywater.

TRUMPETERS (Any other colour, except Mottled).—Highly Commended, W. H. Denton, Woburn (Black). Commended, J. Baily, jun., London, W. (Imported).

OWLS (Any other colour, except Blue or Silver).—Very Highly Commended, F. Elze, Baywater. Commended, Mrs. J. Baily, jun., London, W. (Imported).

NUNS.—Highly Commended, T. Ridpath, Rusholme. Commended, H. Yardley, Birmingham; F. Elze, Baywater.

TURBITS (Red or Blue).—Highly Commended, S. Shaw, Stainland.

TURBITS (Any other colour).—Highly Commended, F. H. Paget, Birstall (Silver); H. Yardley, Birmingham; F. Elze, Baywater.

BARBS (Any other colour, except Black).—Highly Commended, J. T. Lawrence, Everton.

DRAGOONS.—Highly Commended, T. Ridpath, Rusholme. Commended, J. Heape, Birmingham; F. Elze, Baywater.

ANY OTHER NEW OR DISTINCT VARIETY. — Highly Commended, H. Yardley, Birmingham. Commended, S. Shaw, Stainland.

BRIGHTON POULTRY EXHIBITION.

THIS Show has proved itself a great success, it being held just at the height of the Brighton season, and, consequently, when it was most thronged with fashionable visitors. Although taking place in the very midst of the great Poultry Show week at Birmingham, it appears Brighton is too far removed from the inland counties to suffer materially from that circumstance, although it has not unfrequently in other places proved too truly that to hold a show at the Birmingham time risks most materially its success. At Brighton, on the contrary, many of the classes were quite as well filled as we find to be the case at the great majority of our poultry shows.

Through the kind and willing assistance of the Brighton Railway Company the poultry were exhibited in one of the station buildings, than which, for such a purpose, we can hardly call to mind one more suitable. Were such an object desired, this building might be made to hold even a couple of thousand pens commodiously. The light throughout is equal to that of the open air, whilst it is comfortably secure on all sides from every possible casualty of weather. The good result of such being the case could hardly be more strongly manifested than on this very occasion; for on the morning of the Show's opening, as is too well known throughout the land, a gale of unprecedented severity occurred, accompanied by driving rain, which it is impossible to describe as it proved to endure. Still, within the building everything was as comfortable and happy as could be desired. Most luckily, just prior to the hour of opening, the rain ceased entirely, the gale abated to a health-giving breeze, and thus visitors were enabled to enjoy the Exhibition without discomfort of any kind.

The *Grey Dorkings* were certainly one of the chief features of the Brighton Show. They were almost all of high character; the Marchioness Dowager of Bath, and Mr. Wm. Dolby, of Rotherfield, taking the principal prizes with specimens of great merit. In the *Game* classes there were individual birds of high quality; but as being only the second meeting of this Society, of course the art of properly matching their birds did not seem at all understood by the Game-exhibitors. Black-breasted Red hens were shown with Duckwing cocks; Birchen Greys were exhibited with hens of plumage that certainly would not match the feather of any Game cock we ever yet met with, whilst being still in very heavy moult told unfortunately on not a few others. Experience will soon correct these shortcomings another season. The Black *Spanish* fowls were better by far than we anticipated seeing at Brighton, though more than half of them lacked that great feature so very important to success—viz., condition. Perhaps no breed shows to so great a disadvantage as the *Spanish* when lacking this needful qualification. The Pencilled varieties of *Hamburghs* were the only breeds to which prizes were given; the equally useful and beautiful varieties of *Spangled* ones being omitted from the prize list altogether. In the Gold-pencilled a quite new name as an exhibitor—Mr. Francis Pittis, of Newport House, Isle of Wight—took all before him; in fact, that gentleman obtained all three prizes by a mere "walk over."

In the Poland class, open to all breeds, Mr. Panton Edwards, of Lyndhurst, stood first and third with his Black White-crested ones, whose notoriety is become proverbial. Mr. Joseph Hinton, of Bath, however, showed some most excellent Silver-spangled Polands, taking second place. The Bantams were mostly good; Mr. Kelleway, of the Isle of Wight, taking the lead with a pen of capital Black-breasted Red Game, that evidently were not improved by having been over-exhibited. Some White-booted Bantams, and some Grey Game Bantams, were also exceedingly well shown.

To say that Mrs. Mary Seamons, of Aylesbury, won all the prizes for Aylesbury Ducks is so oft-told in our descriptions of poultry meetings, that it begins to suggest itself to compositors to always keep the announcement ready in type, as being always wanted when this lady exhibits. Her rivals were of great excellence also, hence the high commendations of others. In Geese and Turkeys, also, Mr. Dolby, of Rotherfield, had it all his own way, his pens of these birds being of the highest merit.

Pigeons were only blessed at Brighton with a single general class for all breeds: hence came a medley contest. Nevertheless they proved a capital addition to the Show, bringing birds together of no mean pretensions; and on future occasions the Committee, we trust, will feel themselves justified in a considerably extended Pigeon prize schedule.

In Extra Stock it is seldom that a better class is seen; but on this occasion, of course, they received no premiums. This class comprised, besides excellent Silver-spangled Ham-burghs, beautiful dark Brahmas, and not less worthy Silky fowls, some very well-shown Peafowls, and a couple of brace of the Ring-necked Pheasant in excellent feather.

DORKINGS.—First and Second, W. Dolby, Horse Grove, Rotherfield. Third, Marchioness Dowager of Bath, Muntham Court. Highly Commended, W. Stanford, jun., Court Farm, Steyning. **CHICKENS.**—First, Second, and Third, Marchioness Dowager of Bath. Highly Commended, C. Cork, New Shoreham; W. R. Seymour, Crowood, Hungerford. Commended, W. Dolby.

GAME.—First, G. Boniface, jun., Ford, Arundel. Second, S. Ridley, Clayton, Sussex. Third, Rev. F. B. Parkes, Southwick Rectory. Commended, H. Gorringe, Southwick Green, near Shoreham. **CHICKENS.**—First and Third, G. Boniface, jun., Ford, Arundel. Second, G. W. Ranwell, Kingston Crescent, Portsea, Hants. Commended, S. Ridley, Clayton.

SPANISH.—First, A. E. Smith, Wish Street, Southsea, Hants. Second, J. H. A. Jenner, East Street, Lewes. Third, W. R. Bull, Arundel. Commended, Rev. J. de la S. Simmonds, Chilcomb Rectory, Winchester. **CHICKENS.**—First, C. Cayford, Waterloo Street, Brighton. Second, W. R. Bull, Arundel, Sussex. Equal Second, Rev. J. de la S. Simmonds.

POLANDS (Any variety).—First and Third, T. P. Edwards, Lyndhurst, Hants (Black with White Crests). Second, J. Hinton, Hinton, near Bath (Silver-spangled Poland). Highly Commended, F. Phillips.

HAMBURG (Gold-pencilled).—First, Second, and Third, F. Pittis, jun., Newport House, Newport, Isle of Wight.

HAMBURG (Silver-pencilled).—First, B. W. Saunders, St. James's Street, Second, T. Boniface, Ford, Arundel. Third, Marchioness Dowager of Bath.

BANTAMS (Any variety).—First, J. W. Kelleway, Merston, Isle of Wight (Black-breasted Red Game Bantams). Second, W. S. Forrest, Eagle Cliffe, Greenhithe, Kent (Grey Game Bantams). Third, F. H. Phillips, Chippenham, Wilts (White-booted Bantams). Highly Commended, O. Nicholson, Portland Street, Fareham (Red Pile Game Bantams). Commended, F. Pittis, jun., Newport, Isle of Wight (Blacks); S. Ridley, Clayton, Sussex (White Bantams).

SWEETSTAKES FOR SINGLE COCKS.

DORKING.—First, F. Stanford, Lancing, Shoreham. Second, Marchioness Dowager of Bath. Commended, C. Cork.

GAME.—First, G. Boniface, jun., Ford, Arundel. Second, H. Gorringe, Southwick Green.

GESE.—First, W. Dolby, Horse Grove, Rotherfield (Toulouse Geese). Second, G. Hudson, Cooksbridge, Hamsey, Sussex (a mixed variety).

DUCKS (Any variety).—First and Second, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks. Highly Commended, Marchioness Dowager of Bath, Muntham Court; W. Dolby, Horse Grove, Rotherfield.

DUCKS (Any variety).—First, J. Adams, Red Barn Farm, Fareham (Rouen Ducks). Second, H. Peters, Halfway House, Dyke Road (Buenos Ayres).

Commended, Marchioness Dowager of Bath (Rouen Ducks).

TURKEYS.—First, W. Dolby. Second, G. Hudson, Cooksbridge, Hamsey, Pigeons (Any variety).

First, H. Bunce, Queen's Terrace, Brunswick Road, Walworth (Black Mottled Tumblers). Second, E. S. Parkinson, Old

Waine, Brighton (Black Carriers). Third, C. H. Matthews, Patcham (White

Ants). Highly Commended, — Gearing, Brighton (Black Rants); C. York, New Shoreham (Blue Horsemen); T. Duddlestone, Terminus Place,

Brighton (Almond Tumblers); W. H. Fry, London Road, Brighton (White Horsemen). Commended, J. Percival, Montpellier Road, Rye Lane,

Peckham (Toys); C. Cork, New Shoreham (Blue Horsemen).

The Judges were Mr. James Singer Turner, of Chyngton, Seaford, Sussex; and Mr. Edward Hewitt, of Eddon Cottage,

Blackheath, near Birmingham.

THREE GATHERING POLLEN

OBSERVED these indefatigable workers, from three straw
aves in the gardens of this place, uncommonly busy pollen-
gathering at 10 a.m. yesterday (November 28). The day was

mild but sunless, as it generally is here. They kept hard at work as late as three o'clock in the afternoon—in fact, for the past three weeks they have not been idle. For some time I was puzzled to find out from what flowers they succeeded in obtaining such a quantity of pollen at the season, few flowers either in the garden, field, or woods, being in bloom now; but on watching them I discovered the source. It was the ivy, which is just in flower, and of which there is an immense quantity in the woods, clinging round half the forest trees to the height of from 20 to 30 feet. Probably the bees of some of your correspondents gather pollen from the same source.—JOHN EDWARDS, Crom Castle, Ireland.

FOUL BROOD.

IN Mr. Lowe's article in page 444, after declaring that his thoughts are "turned on peace," he nevertheless does not hesitate to stigmatise "B. & W.'s" gentleman-like and straightforward remonstrance in page 364, as a "warlike article," in which the writer has "completely exhausted his fire and fury," and at the same time seems to warn Mr. Edwards that he has a rod in pickle for him at some future time. Surely even Mr. Lowe must be aware that misdescription and hard words on his part only add to the force and justice of "B. & W.'s" protest, whilst I am much mistaken if Mr. Edwards be the man to cower under his implied threat. The passage addressed to myself I dismiss without comment.

Before, however, Mr. Lowe again launches forth into the general question of foul brood, I take leave to draw his attention to a few of his statements which have already been completely disproved by the most conclusive evidence. When he starts on his expedition which is to culminate in the universal acceptance of certain peculiar doctrines, which he naively declares to be in opposition to those of the most skilled apiarists of the day, both English and foreign, it is very possible that I for one may decline to accompany him, unless in the meantime he shows a greater disposition than he has hitherto done to discuss the matter in a fair and candid spirit, and lay aside the habit of carefully ignoring all evidence and facts which militate against his own theories and opinions. I will, therefore, recall a few of his fallacies, and the evidence by which they have been demolished.

1st. *It is only in the hands of the experimentalist that we find its presence (foul brood) generally manifested.* Disproved by Mr. Shearer's narrative in page 182, the evidence of the "STEWARTON APIARIAN," in page 243, and the experience of Mr. Quinby, recited in page 158.

2nd. *Excision of the affected parts is sufficient for the cure of foul brood.* Completely disproved by Mr. Shearer, in page 182, and by my own experience, related in page 78.

3rd. *Chilled brood is not removed by bees.* Utterly disproved by my experiment described in page 342, by the evidence of "B. & W.," Mr. Shearer, Mr. Edwards, and many others, as well as by the observation of every bee-keeper who has noticed the fact of chilled larvae being dragged out of beehives in spring.—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

WHITE BANTAMS (J. G.).—Rose combs are more highly considered than single combs. It is not indispensable that they should have white legs, but dark legs are a disadvantage. Neither a single comb nor a blue leg is a disqualification.

FOWLS FALLING SICK (A Subscriber, Wotton).—It is bad for fowls to roost too thickly in a house, but it would hardly account for the constant sickness you describe. What is the flooring? If stone, brick, or board, that is the cause of much sickness. Your feeding is good. Remove the flooring if it is objectionable. Give the birds plenty of bread and ale. Feed in the morning on ground oats, at midday on barley, and in the evening on meal again. Give bread and ale at intermediate times. Feed often and sparingly, always remove diseased birds, and keep them separate.

DISSOLVING LEAD IN WATER (W. H. B.).—Chromate of potash causes a canary-yellow precipitate from water containing lead in solution, and sulphate of soda causes a white precipitate. If we had a lead distill we should sell it and replace it by a slate cistern. All household queries are willingly answered in this section of our columns. We do not purpose to divide our columns in the mode you allude to.

SAFETY OF CHASE'S BERTHA FORSON (M. D.).—We have reason for believing that this is not liable to ignite. Whether the pills will inflame by friction any one may prove by rubbing one of them against a hard substance. We have seen a note from Capt. H. Marder, commander of the ship Agamemnon, stating that this poison is a most effectual destroyer of cockroaches, mice, and rats, and it may be placed in all parts of a ship with

WEEKLY CALENDAR.

Day of Month Week.	Day of Week.	DECEMBER 15-21, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.		m. a.	
15	Tu	Stinking Nettlebore fl.	46.3	34.7	40.5	21	2 48	49 43	56 10	4 10	5	4 44	349
16	W	EMBER WEEK. Bander died, 1843.	45.7	34.2	39.9	16	3 8	49 3	20 11	22 11	6	4 15	350
17	Th	Haller died, 1777. Rot.	46.8	33.8	39.8	17	3 8	49 3	43 11	moru.	7	3 45	351
18	F	P. Miller died, 1771. Gar.	44.8	32.7	38.7	19	4 8	49 3	7 0	39 0	8	3 16	352
19	S	C. M. Fletcher died, 1836. Gar.	44.5	32.5	38.5	17	5 8	50 3	30 0	52 1	9	2 46	353
20	Sun	4 SUNDAY IN ADVENT.	44.0	33.7	38.9	13	5 8	50 3	59 0	4 3	10	2 16	354
21	M	St. Thomas. Shortest Day.	43.5	33.8	41.1	13	6 8	51 3	32 1	14 4	11	1 46	355

From observations taken near London during the last thirty-six years, the average day temperature of the week is 41.9°, and its night temperature 33.8°. The greatest heat was 58°, on the 16th, 1849; and the lowest cold, 7°, on the 16th, 1853, and 19th, 1859. The greatest fall of rain was 0.76 inch.

PEACHES UNDER GLASS AND ON THE OPEN WALL.



UCH interesting discussion has recently taken place, from both scientific and practical points of view, concerning the relative merit of Peaches as to colour and flavour when grown under glass, and on

open walls. If the colour and flavour were the only points to be taken into consideration in the erection of orchard-houses or glass screens, the advocates of such erections would certainly not lose such a great deal after all by following the course preferred by those who object to glass, and contend that fruit from the open wall is the best. No doubt, in some localities, and with favourable autumns, Peaches from the open wall may be produced higher in both colour and flavour than others to which the protection of glass has been applied. Nevertheless, a question may be raised as to the propriety of a certain class of favourably-situated cultivators laying such a result down as a rule to be followed by another, and, I suspect, a large class, very differently situated, and who are rather inclined to question the wisdom of saying that it is all moonshine to think that regular and fine crops cannot be counted on for years in succession without the protection of glass. To single out the results of a few favoured localities, and lay them down as a rule to be relied upon by all, is not the most conclusive way of establishing any theory or argument however favourable the premises may be granted to be.

What say those who are cultivating the Peach both under glass and on the open walls, or those who have abandoned the latter in favour of the former, in by far the majority of localities in Scotland and Ireland, and in many districts in England as well? Under which of the two systems have they produced the most abundant crops with regularity year after year, and with least anxiety and trouble? By which of the two systems have the best-flavoured fruit been produced? It would be very interesting and instructive if all the gardeners in the kingdom could be induced to hand in statistics bearing upon this matter, and it would be very much more decisive than any amount of argument that can be advanced, favourable or unfavourable, by a few isolated individuals.

Taking a survey of this district, which is one of the most highly favoured to be met with in Scotland, while the more immediate locality from which I write is considered to have a less rainfall than any other in the kingdom, and it has a fine loamy soil, yet there is not a

garden in it with which I am acquainted, where under the best management crops of Peaches can at all be counted on from the open wall. A full crop once in four or five years is as much, if not more, than can be looked for, judging from past experience. Under glass crops are plentiful and good. In fact, the open-wall cultivation of the Peach is one of the most disheartening and unsatisfactory departments of many good gardens which are famed for other fine fruit on the open walls.

If we travel a little further west, and enter Midlothian, I could there point to hundreds of feet of Peach walls, upon which the trees had to struggle for an existence, to say nothing of the quantity and quality of the uncertain crops, but which after being covered with glass have luxuriated and borne crops of fruit which for quantity, size, and quality, could never have been hoped for; and this, too, without any change whatever except their being covered with a light glass screen, the soil, the aspect, and the management being the very same in every respect as before they were protected with glass. There formerly was more of mildew, blister, and red spider, than anything else, and now seasons pass over without the appearance of these enemies, and a full crop of very superior fruit can annually be counted upon. If such be the results in more favoured localities, what must it be where there is less sunshine, and a greater rainfall, with late spring and earlier autumn frosts, and winter frosts much more severe? Under such circumstances it becomes not a question of a degree or two in flavour and colour, it is the chance of a crop at all; nay, in some cases, the very existence in a state to be tolerable of the Peach tree, not taking into the account the immunity from danger that occurs in severe winters, such as are occasionally experienced, and which cause serious damage to the young wood of the trees. In the winter of 1860-61, the whole of the previous summer's growth on Peaches was here cut back to the old wood, while in places where the frost was some 8° or 10° more intense, Peaches under the protection of glass screens escaped untouched. Such exemptions from injury were probably as much owing to the better-ripened state of the wood, as to the difference, if there were any difference, of temperature effected by a glass case. Last year being one of the wettest seasons which have occurred here for a good number of years, Peaches on the open walls had the most lamentable struggle which it is possible to conceive. The fruit were small and flavourless, the wood was mildewed and weak, and when pruned in December it was more like operating on Laurels than anything else, for the trees were well clad with green leaves. Under glass cases in less favoured gardens, as to soil and climate, the crop was plentiful and fine, and the wood in fine condition; and this season, although our Peach wall was covered with glass last winter when it was too late to be of any benefit to the trees, there was nothing like a full crop, but the fruit produced were vastly superior in size, colour, and flavour to any obtained from the open walls here during the last five seasons. The trees have such wood and bloom-buds as could never have been produced without glass, while

mildew and curl, formerly in abundance, never appeared, except on a young tree of the Royal Charlotte.

It is all very well to say that fine Peaches can be produced regularly on the open wall, by taking the precaution of covering when in bloom in spring. This may be applicable enough to some localities. We are bound to believe that it is from the advocates of the system, and the facts they adduce, and there is, perhaps, not much harm in their playing a tune on their own fiddle, as long as they do not insist on every person dancing to it. Assuredly it would not be the best mode in the great majority of districts in Scotland, nor in a good many in England, where I have known good gardeners give up the open-air culture of the Peach in despair, and succeed well with glass coverings. I have myself had Peaches and Apricots frosted when they were about the size of pigeon's eggs.

I cannot help thinking that where Peaches under glass in September and October are found so deficient in colour and flavour, as compared with those from the walls, there must be some disadvantage in the construction of the Peach screens, or some deficiency in their management. There are very few, if any, localities, one would suppose, where the Peach is found more healthy on the walls than under glass. This granted, we have one great fundamental condition for the production of good fruits. The want of colour and flavour has been the objection raised against glass protection. Upon what conditions do these important qualities depend? In order to answer this question satisfactorily, it is not necessary to enter into physiological arguments which have led to the conclusion which practice has attested—namely, that the flavour and colour of fruit in general, and, perhaps, Peaches in particular, depend on full exposure to light, a free circulation of dry air, with a lessened amount of moisture in the soil, and, in consequence, a higher ground temperature. These, too, are the means which produce the best ripened wood and fruit-buds—results which are unquestionably more generally obtained under glass than on the open walls. It is, therefore, somewhat singular if the same result in the ripening of the fruit, depending on the same agencies, should be wanting under glass. My own experience of the two systems has been unmistakably in favour of glass coverings. I have seen under glass Royal George and Barrington Peaches, of the darkest red, and far larger and better-flavoured than any that could be produced in the same garden without glass. These were ripened in houses constructed of large panes of the clearest sheet glass, where the whole front and top lights can be thrown so completely open as to keep every leaf and fruit in the house under a constant circulation of air. Probably the fruit loses to an injurious extent the rays of the sun by the intervention of glass; but this loss, it may be allowed, is more than counterbalanced by protection from night dews, heavy rains, wet and cooled borders, all of which must be prejudicial to high flavour. Therefore, I cannot help thinking that in by far the majority of localities there must be something amiss in the construction of the glass protection, or in the management of it, if in-door Peaches in September and October are not superior to the same varieties on the open walls at that season, when they are subject to the chilling and drenching influences of the heavy dews and rains which so often prevail.

If it can be maintained that from the obstruction of the rays of light by the clearest glass, Peaches on a back wall, or on a trellis a couple of feet from the glass, are inferior to those grown without any such obstruction, what is to be said of those grown as dwarf bushes, set in rows along the floor of a flat-roofed orchard-house? Reasoning from the same premises surely they must be very inferior. Yet we are led to believe that they of the bush are often fine in flavour; that Apples and Plums, &c., are even better than those of foreign growth. If this be so, the flavour in their case must depend upon other circumstances, which cannot be secured without glass, as well as upon light. Till lately I had an idea that Apricots grown under glass were always inferior in flavour to those on the open wall, but under the influence of properly-constructed and ventilated houses I am now convinced that such is not the case; and I know of an employer who this year told his gardener who had sent Apricots to table from a covered wall, that he might say he

But granting, as I am quite willing to do, that when Peaches can be ripened on the open wall under the influence of a bright and dry autumn, they are a degree or two more highly coloured and flavoured than under glass, I am not at the same time willing to forego the advantages which glass affords in wet and ungenial seasons, which are as much the rule as the exception. Were light the only agent which affected the flavour of fruits and the health of plants, the case would be widely different; but all who have experience in this matter are perfectly well aware that a soil drenched and cooled with rain is inimical to the acquisition of the proper flavour in all fruits, to say nothing of the fruit and foliage being bathed for days and nights with cold dews and rains. To be able to prevent such a state of things must be allowed by the opponents of glass to vary nearly, if not quite, make up for the rays of light that are held back. In fact, taking our fickle climate into consideration, there are so many advantages to be enumerated which are secured by protection, that its very slight disadvantages may safely be put up with; and those who contend that all its advantages and none of its disadvantages are secured by simply covering with frigi domo in spring, must surely have a very one-sided view of the climate of the United Kingdom.

In all considerations of this sort the expense is always considered by all concerned; but even in this important point, if the expenses of the respective systems were to be carefully calculated, I feel persuaded that when extended over a period of years there would not be much to show in favour of covering with frigi domo or strong canvas. The erection and heating of glass can now be done so cheaply that it is astonishing how large an amount of such work can be done for moderate sums, and I am labouring under very wrong impressions, if nine out of every ten gardeners would not prefer the glass to any other mode of protection.

D. THOMSON.

GROWING CHRYSANTHEMUMS WITH A SINGLE FLOWER ON EACH STEM.

In replying to the query of "T." respecting the culture of the Chrysanthemums exhibited at the Floral Committee, South Kensington, November 10th, it will be necessary to state that those plants were grown for a special object—viz., that of producing one flower of large dimensions. The method employed was a decided success, but one we should not recommend to be so strictly pursued again, and for this reason: each plant might have been grown to produce three or four large flowers, whereas one only was allowed to be perfected; the consequence was that the plants, not having a sufficient number of buds to nourish, formed unusually stout woody stems. There was nothing uncommon in the treatment beyond the severity of disbudding and thinning out.

To secure fine flowers is easy enough, by taking either cuttings or rooted suckers from an old plant at the latter end of March or beginning of April; these should be potted into 48-sized pots in a mixture of equal parts of mellow loam and well-decayed leaf mould, sufficient silver sand being added to make the compost porous. In a short time the young plants will be well established, and by the end of May should be repotted either singly or in pairs into pots of 10 or 12 inches in diameter, in a mixture of equal parts of loam, well-decayed frame manure, and leaf mould, adding silver sand to keep them porous. Be careful in well draining the pots; crushed oyster-shells will be found very beneficial for this purpose—the roots of the Chrysanthemums seem to rejoice in these fragments.

When potted the plants should be placed in an open and airy part of the garden, and never be allowed to flag from want of water; as the side shoots are produced they should be pinched out, and every sucker that is thrown up from the roots removed. About the middle of July three or four leaders should be encouraged, and from these the flowers are to be produced. Early in August the flower-buds will begin to show themselves, and now some judgment will be required in selecting the bud which is to remain. Generally a single bud presents itself, to which a kind of strap-leaf is attached; this is the bud that produces the finest flower. When that appears, the plant should be kept in a green and healthy ap-

pearance, at once remove all other buds which are formed above it on the extreme points of the plant; these buds are usually formed in threes. Should the single bud alluded to be unhealthy, then select one of the three terminal buds in its place. The result will be success, however unnatural this process may appear.

The plants should be frequently syringed in the evenings in warm weather. This much encourages the vigour of the foliage. Never use liquid manure till the flower-buds are formed, and as they increase in size so you may increase the strength of the liquid used. That produced from sheep's dung is, perhaps, the best; and should the roots show themselves on the surface of the pot, let them be covered over with rotten manure kept well moistened.

At the end of October, or as soon as the buds begin to expand their petals, remove the plants under cover to protect them from sudden frost or violent rain and wind. If removed to a greenhouse admit a free current of air day and night. It is protection from weather, not heat, that the plants now require. About the first week in November you may expect your reward, your plants having perfected fine, large, and splendid flowers, by no means in the opinion of florists resembling mops with straight handles, so facetiously suggested by a writer in a contemporary respecting the specimens in the conservatory at South Kensington.

VERBENAS.

A SELECTION of the best sorts, as we have found them in this locality (Somerset), may be interesting, especially when taken in connection with "D" of Deal's jury on the same subject (see JOURNAL OF HORTICULTURE, page 387). Having cultivated upwards of a thousand sorts since 1856, and having a great liking for the flower, as I consider it amongst the best ornaments we have for the flower garden, I have taken great pains with it, and am happy to find that the Deal jury have put down a seedling of my own, Miss Hughes, as A.1. I was much pleased with "D" of Deal's "hanging" bout; it is a process that requires to be carried out upon some other families as well as the Verbena.

I bought eighty sorts of the new Verbenas of 1863, but was sadly disappointed with a great many of them, and I think "D" of Deal, and his friends, have served them quite as they deserved; I may say that I never knew a worse lot sent out than those of 1862-3, nine-tenths of them were mere rubbish.

The following list contains what I consider the best of what have appeared during the last ten years. I have arranged them in sections of colour, and made a few observations about each section, hoping that it will enable your readers to choose those sorts only which are most effective and likely to give them the most satisfaction.

SECT. 1, DARK CRIMSON.—Negro Boy and The Moor are two very dark and effective sorts for dark beds, and there is also Lord Elgin, the darkest sort yet produced.

SECT. 2, CRIMSONS.—Admiral Dundas, Chauvieri, Géant des Batailles, Gloire d'Automne, Little Pet, Master Corbet, Rainbow, Rougieri (same as Fanny Stracey). This beautiful section contains colours of dazzling brightness; Chauvieri is yet unmatched in colour, and Rougieri in both colour and form has no equal. The well known Géant des Batailles is one of the best bedders yet out. Master Corbet is new, and very fine for a bed; Little Pet is a dwarf and compact free-flowering gem.

SECT. 3, BRIGHT OR SCARLET CRIMSONS.—Evening Star, La Gloire, Morning Star, Nemesis, Sir J. Paxton, and Star. All these are fine and beautiful flowers with large and conspicuous eyes, excepting Nemesis, which is a lovely and finely formed flower. Mrs. Scott, a new flower coming out next spring, is an improvement upon it, being much brighter in colour, equally well formed, and a very free flowerer.

SECT. 4, SCARLETS.—Comet, Electra, Fireball, Firefly, Foxhunter, King of Scarlets, Lord Raglan, Magnet, Melindres, Mrs. Woodroffe, and Old Defiance. This may be called the most brilliant and most telling section of Verbenas; Firefly, Foxhunter, Magnet, and Melindres are dazzling in their brightness. Melindres is the oldest of all the creeping kinds, and still one of the best for small beds; Firefly is, perhaps, the best scarlet bedder we have; and Lord Raglan,

a different and lighter shade, is unsurpassed for the profusion of its flowers; Foxhunter is a great acquisition; Magnet and King of Scarlets are two lovely sorts, with fine yellow eyes, and are excellent bedders; Mrs. Woodroffe is a large and fine, hardy late-flowering sort. We have a bed here now, Nov. 30th, in fine flower.

SECT. 5, MAGENTA OR SHADED CRIMSON.—Brilliant de Vaise, General Simpson, La Gloire, Miss Hughes, and St. Margaret. These are all splendid flowers. The first is a fine sort for large beds, or for a hanging-basket and vase; General Simpson is a fine and profuse bloomer; Miss Hughes is one of the finest formed and finest trussing Verbenas out, and was a seedling of my own, it is good both for bedding and for pot culture; St. Margaret is one that has stood the test of years, it is a lovely and profuse flowerer, it has kept its place against all comers for nearly thirty years, I think Melindres and this are the oldest of our best bedders.

SECT. 6, ROSE (of various shades).—Mrs. Spencer, L'Avenir de Ballent, Great Eastern, Lizzy, and Great Western. These are all fine, and very free-flowering sorts, and give a pleasing variety to the flower garden.

SECT. 7, BLUISH VIOLET.—Garibaldi, Lady Palmerston, and Mrs. Moore, are all charming kinds, but the first two are rather shy growers; Mrs. Moore is the best of all the blue sorts with white eyes; although not one of the largest, it is a free grower and profuse flowerer.

SECT. 8, PURPLES (of various shades).—Ariosto, Ariosto Improved, Claudia, Desdemona, Eyebright, King of Verbenas, Purple King, and Rival André. These are all fine bedders; the first might be dispensed with, as the second is so much finer. King of Verbenas is a splendid bedder, with a fine eye; and Purple King is so well known, and so good, that it has not yet been equalled in habit or profusion of flowers.

SECT. 9, PURE WHITE.—Boule de Neige, Mrs. Holford, Mrs. Hosier Williams, and Snowflake, are all very fine, the last as yet unequalled, the first has not yet come up to it; Mrs. Holford, when well grown, is a charming variety; and Mrs. Hosier Williams is a dwarf, free-flowering, and upright-growing sort, excellent for small beds, and is of pearly whiteness.

SECT. 10, FRENCH WHITES WITH FINE EYES.—Admiral Lyons, Madonna, and Venus. These are all charming bedders. Madonna is an old sort, but is still one of, if not the best of this tribe; Venus is as she should be, lovely and charming.

SECT. 11, STRIPED FLOWERS.—Carolina Cavagnini, Comte Bernardo Leechi, Madame Zoudier, Madame Lemonier, Noble Carolina Franzieur, Sarha, and Striped Perfection. These are all charming flowers, beautifully striped with a sort of Maltese cross in each floret.

SECT. 12, SMALL STRIPED SORTS OF MAONETTI, purple, scarlet, and white striped, fine for rockwork, vases, and small beds in sunny places.—JOHN SCOTT, Merriott.

Hogg's BRITISH POMOLOGY.—It will be seen from our advertising columns that this work, of which the first division only has been published, is to be continued in the pages of *The Florist and Pomologist*, of which a new volume will be commenced on the 1st of January next. The subject will be "The Pear," and will contain a full description of every known variety, with woodcut illustrations of all that are most deserving of publication. Such a work as this has been much wanted.

PROTECTING PLANTS.

So much has been said of late about protecting bedding plants from frost, that I think it may not be amiss to inform amateurs of a plan which was recommended a few years back in *THE JOURNAL OF HORTICULTURE*, which plan I adopted, and found it to answer all the purposes required. It is this—

A frame, or frames, made of boards 1 or 1½ inch thick, whatever size suits best (mine are 6 feet by 4); this frame to be cased all round with boards half an inch thick, leaving a space of about 3 or 4 inches, which is to be packed well with dry sawdust. To protect the top a frame is made of half-inch board about 2 inches wide, on which is tacked roofing-felt. This frame-cover is made to fit tightly all round, and to rest on a ledge tacked immediately under the

or sash. The plants being thus protected from frost, that hoary-headed general with all his force may storm the garri-son without being able to effect an entrance. The only thing then to be dreaded, is the damp in February.

The outer frame should receive one or two coats of gas-tar every year.—S. T. A., *Castileview*.

THE USE OF FREE OXYGEN IN PLANTS.

DURING the formation of the hydro-carbons by plants, may not the free oxygen, separated from carbonic acid and water, be made use of in some other way than that of dissipation to supply the portion that has been fixed to carbon and hydrogen in the bodies of animals and other forms of combustion? Is it not possible that a much larger proportion of the oxygen separated from carbon and hydrogen by the plant, may have an important office to fulfil in the plant itself? May it not descend dissolved in the juices of the plant and exude from the roots, exerting an influence on the constituents of the soil, combining with its carbon to form carbonic acid, and its minerals for the osseous structure, and thus convert substances incapable of being absorbed into a pabulum suited for the nourishment and structure of plants? At the same time this radical exudation, if it had this solvent property, although imperceptibly acid (gastric juice is also an example of a bland and almost tasteless fluid, having the property of dissolving and rendering organised substances, however hard, capable of being absorbed by the minutest pores of the body), would break down and convert into a soft pabulum hard, dry substances, enabling the thread-like rootlets to push on and suck up food, more suited for the plant, much after the manner that a fly feeds on hard sugar, first moistening it and then sucking it up. This seems rather an interesting question; for, if true, it would explain how plants grow in climates where there is no rain, and, consequently, the soil dry, and where dew alone can furnish moisture for absorption by the leaves, the roots being useless as far as nutriment is concerned, unless the moisture descend in some such fashion as I have alluded to. I am aware there is a class of plants in which the surfaces which are exposed to the air are covered with a waterproof film to prevent the exudation of moisture; also, that these grow in countries not watered by rain. In their case the roots must grow near the surface to enable the plant to obtain the requisite amount of moisture. Still plants rooting deeper and not covered with this film must live entirely upon the moisture absorbed by their roots. Could the Editors of THE JOURNAL OF HORTICULTURE enlighten me on the subject?—A CONSTANT READER.

[This is a subject far too intricate to be decided by mere reasoning and analogy. Sometimes plants do not emit so much oxygen as they ought if they emitted all the oxygen from the carbonic acid they are known to have absorbed. But at other times they emit more than the due amount of oxygen. Experiments have proved that oxygen applied to the roots of plants invigorates them, but we have no researches on the point here suggested, that plants may supply the oxygen to their own roots.]

CROCUS IMPERATONIUS.

CAN you or any of your correspondents inform me where bulbs of the *Crocus Imperatoni* or *Imperati* can be procured in England, as I have never succeeded in obtaining it from any nursery garden? I once brought a few bulbs from hedgebanks in South Italy (Amalfi), which I keep in pots in a cold frame, and they generally flower every year about Christmas, but have not increased. As January is the natural time for them to flower, there is no chance of their ever succeeding in the open border; but as no *Crocus* is more beautiful it is well worth some care, and the result of my experience of a successful grower would be valuable to those who may wish to cultivate the same (if they can obtain it), as well as—A CONSTANT READER.

—I think your correspondent, Mr. Scott, page 455, makes a mistake in stating that these two plants are common now. At least

I have the two from the London trade entirely distinct. I am happy to hear from Mr. Scott, that *argentea* when planted out is a rival to *ragusina* in beauty. It must then be good indeed. I have not yet tried *argentea* planted out, but in pots *ragusina* is the favourite here, but that is no argument against Mr. Scott's statement of it when planted out.—D. T.

GARDENING AT CANNES.

I WAS much interested the other day, in looking over the report of Trentham Gardens in your columns, to see a number of plants mentioned as doing well in the conservatory there, which I find most useful and ornamental in our gardens at Cannes. It gave me great satisfaction for this reason—that I had so often remarked to some of our numerous English visitors that if the Cannes climate were imitated in the English conservatories a similar effect might be produced in the winter months. To obtain this all watering must be suspended, and as much air given as possible, but excluding rain, for six months until about the end of September, when water might be given freely, and everything would then push with great vigour and new life, as is the case here after a burning hot summer. I say water freely, meaning that a good soaking should be given to the soil, which should then be left for the winter, as the great danger in the English climate is dampness, and the object to be attained is a perfectly dry atmosphere. I am considering, of course, that everything is planted out in these conservatories.

I see mentioned as doing well in the Trentham conservatory the *Tacsonia mollissima*; to me it seems a thousand pities that the *igne* is not there in its stead, which is far more handsome and quite as free a grower and bloomer as *mollissima*.

The three most remarkable and attractive plants in our gardens now are *Tacsonia ignea*, the *Chromatella Rose*, and the *Salvia eriocalyx*. The first is literally covered with open flowers and buds of a bright scarlet, contrasting admirably with the thickly-carpeted green wall. The second, queen of all the Tea and Noisette Roses, is at this moment a perfect picture. We have several of them trained in a pyramid form to the height of 15 feet, and covered with blooms measuring from 5 to 6 and even 7 inches in diameter, and as double as a *Camellia*. The third, *Salvia eriocalyx*, is, without doubt, the best of the whole family, enlivening our gardens, as it does now, with the great contrast between its calyx and flowers, the former being of a lovely mauve colour and thickly studded upon long branchy spikes like balls of silky wool; and the flowers, of a pure white, peering out from the centre of each one, give a liveliness to the gardens that none but eye-witnesses could conceive. This would be well worth a trial in a conservatory, and I have no doubt would do well if planted out. Now none of these three is noticed in the report of Trentham, though possibly they may be there; but if not I should say, By all means try them, and I feel sure the result would be satisfactory. The *Abutilons*, again, such as *venosum*, *giganteum*, *Duc de Malakoff*, and the white one, which are charming winter-flowering plants, are now in great beauty. Why not give these a trial? Most of the other plants we have now in bloom are about the same as those noticed at Trentham; so striking was the resemblance that nothing seemed left but this great difference—that at Trentham they were under glass, and here in the open air.

I will hurriedly run over the list as I see them in our garden. *Cestrum aurantiacum*, so highly spoken of by Mr. Fish, deserves even more than can be said of it, and we have plants of it 8 feet high and as much through covered with its golden racemes of flowers; and the *Habrothamnus fasciculatus*, a beautiful contrast to the *Cestrum*, although not growing quite so strong, is now loaded with bloom, and will last much longer. Nor is the blue one (*Habrothamnus cyanus*), to be despised, for although a straggling grower, it is very distinct in all points from any of the others. The rest of the list consists of *Acacia miriobotryum* (?), invaluable for bouquet-making; *Capraria lanceolata*, *Cassia tomentosa*, *Eriobotrya japonica* (Japanese Medlar), *Polygalas*, *Veronicas*, *Lantanas*, *Correas*, *Bignonias*, *Salvias* in variety, and *Roses* in profusion. The beautiful *Impatiens* *Leardi* covering a great length

of wall; and in the immediate neighbourhood of our garden fine plants of *Russelia juncea* covered with its scarlet flowers.

I had long been intending to have a private communication with one of your able writers, Mr. D. Beaton, my old apprentice master at Shrubland, and was in the act of doing so when, to my great sorrow, I heard that he was no more. I feel sure, from the pains which he took in teaching me, that he would have been much interested with my simple description of this beautiful climate. I feel his death is to me as a foundation stone of a house removed. Although, fortunately, I never had occasion to apply to him, I always looked upon him as a sure support to fall back upon if necessary; but my loss is a simple one compared with that of the horticultural world, for which he spared no time or pains.

In conclusion, I cannot omit giving one remarkable instance of the rapidity of vegetation at Cannes. In March, 1862, I sowed seeds of different kinds of *Eucalyptus*, and planted them out less than 3 feet high in May, 1863; they have now attained the height of 16 feet, and are fine, large, graceful trees. I recollect the interesting account in the reports of the last great exhibition given as to the various produce of these trees, and I think that they will soon become timber trees of this country.—JOHN TAYLOR, Gardener to T. R. Woolfield, Esq., Villa Victoria, Cannes.

FRUITING STEPHANOTIS FLORIBUNDA.

YOUR correspondent, Mr. John Edlington, Crom Castle, asks for information on fruiting the above. I will explain how a plant of it was treated when under my care at Ripley Castle. The plant in question was in a border resting on an old brick flue. The soil in which it grew was composed of light loam, peat soil, and sand. The border was 1 foot 6 inches in width, and the same in depth. This was at the back of a succession Pine stove. During the season of rest the soil was kept dust dry. Early in the spring the plant was supplied with plenty of water at the roots and a bottom heat of 78°; and a moist humid atmosphere ranging from 70° to 84° was preserved during the day, and a night temperature of 68°. The same plant produced eight or ten fruit two years in succession.—W. CLARK, Chesterford Park.

EXHIBITION OF BEDDING PLANTS.

I WAS very glad to see, by the very interesting communication of your correspondent, Mr. F. W. Adey, in *THE JOURNAL OF HORTICULTURE* of the 1st inst., that this subject is not entirely forgotten.

I think that it was first alluded to by the late lamented Mr. Beaton, and the matter is, I think, well worthy of the consideration of nurserymen, and in fact of all interested in the growing of bedding plants; and this, no doubt, comprises a large portion of the readers of *THE JOURNAL OF HORTICULTURE*.

It must be evident to all in any way conversant with the subject, that but a very imperfect estimation of the adaptability of any variety of plant for bedding purposes can be formed from seeing a specimen or two exhibited growing in pots, and produced under glass.

The question which next presents itself is, How should they be grown and exhibited? I cannot at present turn to the remarks of Mr. Beaton in *THE JOURNAL OF HORTICULTURE*, but I think he recommended them to be grown and shown in boxes. When I read his remarks on the subject I thought the idea was very good, and I cannot now see any objection to it.

It would, of course, be very desirable that a uniformity of size and shape of the boxes or pans in which the plants are grown should be adhered to; so with your permission and with the greatest deference, I would beg to suggest that they be 2 feet 6 inches long, by 1 foot wide, and about 6 or 7 inches deep. This depth, I think, would be quite sufficient. They ought to be filled with plants struck from cuttings in the preceding autumn or spring, and plunged to the rim in the open border, fully exposed to all sorts of weather, not later than the 1st of June. Supposing the exhibition to be held in July, the plants would by that time have sufficiently

developed themselves to cover the entire surface of the boxes or pans, and these might be placed upon the exhibition-table in all respects miniature and portable flowerbeds. From having been treated in every way the same as the ordinary occupants of the parterre, the appearance of the plants on the exhibition-table would convey a tolerably correct idea of their merits as bedding plants.

All plants used as bedders might, I think, be grown and shown in this manner, including *Verbenas*, *Petunias*, *Lobelias*, variegated *Geraniums*, &c. Also, the new golden *Tricolor Geraniums*, of which the variety called *Mrs. Pollock* may be taken as the type. With regard to these an impression appears to prevail that they require something like protection or shelter; but that such is not the case I have no doubt many of your readers have discovered during the last summer, and have found that the more they are exposed to light and air the more intense become the colours of their beautiful foliage, and in most soils they grow as freely as the common *Scarlet varieties*.

I am rather pleased to think that I am not alone in my endeavours to raise a Ghost in the form of a variegated *Geranium* with *Madame Vaucher*, i.e., pure white, flowers. I trust that your correspondent, Mr. Adey, may succeed in doing so; but I have heard that a silver variegated *Geranium* with white flowers does already exist, and is to be seen in the establishment of the Messrs. Lee, at Hammersmith. But my ambition soars still higher than this, and I have not yet despaired of raising a *Geranium* with golden *Tricolor* foliage, and producing pure white flowers. This will continue in one individual plant four distinct colours—viz., green, scarlet, yellow, and white. If I succeed in doing this before your correspondent, Mr. Adey, or any other person, I will with his permission (not without it, as he has already bespoken the name), call it *The Ghost*.—G.

ROYAL HORTICULTURAL SOCIETY'S COMMITTEES.—DECEMBER 8, 1863.

FLORAL COMMITTEE.—This was the last meeting of the present year, and, as might be expected, at this late season there were very few plants for inspection.

Mr. Veitch sent four very interesting varieties of a seedling hybrid *Orchid*, the result of Mr. Dominy's persevering skill. The plants are the produce of a cross between *Calanthe vestita* and *Limatodes rosea*. One seedling, which is named *Calanthe superba*, was particularly beautiful, with a long spike of deep bright rose flowers, the centre marked with a dark spot. This was awarded a first-class certificate. The three other plants were of a lighter shade, and two of them with white centres. These had been before the Committee before, and received certificates.

Messrs. Smith, Dulwich, sent plants of double and single-flowering *Primulas*. The rosy purple double variety, and the double white, were fine flowers, but not superior to others previously exhibited by the same firm. The single variety, a fringed deep rose, appeared to be from the strain of Mr. Benares' *Primulas*. The plants were very young, and not in condition for it to be decided whether this deep colour will remain as the plants advance in growth.

Mr. W. K. Brown, Great Marlow, sent cut specimens of an *Anemone*-flowered *Pomponé Chrysanthemum*, with a deep, full centre of pale lemon; the white back petals were irregular, and too reflexed to make it a perfect flower. It received a second-class certificate.

Mr. Macintosh, Hammersmith, also sent cut flowers of *Chrysanthemum Magenta*. Flower small, colour not new.

Mr. McMorland, Haverstock Hill, sent *Odontoglossum phalaenopsis*, an old and well-known *Orchid*, but not very often exhibited. It is one of those which require a cool-house treatment, and like many of its family has suffered much from the high-temperature treatment. The plant though small produced a spike of four or five very beautiful moth-like flowers, white ground, marked on the lower lobes with pale lilac spots and blotches. Not being a new variety a special certificate was awarded to denote its value. When the cool treatment of *Orchids* which will not endure high pressure becomes more generally adopted, we may expect to see again many excellent old varieties, which for a

have been lost through mistaken treatment in their cultivation.

Mr. Bull, Chelsea, sent plants of a beautiful *Saxifraga japonica* tricolor, one of the many interesting plants introduced by Mr. Standish from Japan, specimens of which we saw two years ago at Bagshot. This *Saxifraga* has most remarkable variegated foliage, the dark green being relieved by bright rose and creamy white variegations. This will prove a valuable plant for suspended baskets. The runners carefully trained would make a very pretty specimen. As a decorative plant adapted for this special purpose, a first-class certificate was awarded to it.

From Mr. Bull also came *Burlingtonia decora* (picta, Hooker), from Brazil, a well-known Orchid; *Dracena terminalis latifolia pendula*, resembling a species already well known; *Eranthemum rubrovenium*, a variegated-foliaged plant not dissimilar from another variety; *Kennedyia Fredwoodii*, not equal to *K. Marryatæ* or *prostrata*. Three plants were placed on the table by Mr. Eyles, from the Society's garden at Chiswick, presented by a gentleman whose name we did not hear—a *Sonchus filifolia* with very thread-like foliage, an *Aralia*, and *Hottonia*. They appeared to be plants unknown, and were too young for any opinion to be formed on their merits.

FRUIT COMMITTEE.—Mr. Nash in the chair. At this meeting there was one of the largest exhibitions of fruit that have been seen during the season. The prizes offered were—Class A, For the best three dishes of dessert Apples, distinct kinds. There were no less than seventeen entries, and all sufficiently meritorious. As is usual in such cases, it was not the largest and the best-looking that proved the best in flavour, and consequently many collections that looked as if they ought to have taken a prize were numbered among the unsuccessful competitors. The first prize was awarded to Mr. Ruffett, gardener to Viscount Palmerston, Brockett Hall, for very deliciously-flavoured fruit of Cox's Orange Pippin, Ribston Pippin, and Cockle Pippin, and all of which were beautiful specimens as well. The second prize was taken by Mr. Simpson, gardener to Lady Molyneux, Stoke Farm, Slough. He exhibited three collections, all of which were very fine specimens of the sorts. That which obtained the prize consisted of Cox's Orange Pippin, Cornish Gilliflower, and Ribston Pippin. The others were Rosemary Russet, Cornish Aromatic, Claygate Pearmain, Golden Harvey, Keddleston Pippin, and Scarlet Russet.

Mr. Cox, gardener to W. Wells, Esq., of Redleaf, exhibited no less than five collections, all of which were different, and consequently contained fifteen varieties of dessert Apples. Among these Sam Young was particularly noticeable as being the finest-flavoured Apple in the whole collection. Cox's Orange Pippin was also very richly flavoured. For this collection the Committee awarded Mr. Cox a certificate of commendation. Mr. Curd, gardener to M. J. Thoytts, Esq., of Sulhampstead, also exhibited a large number of varieties of dessert and kitchen Apples amounting to twenty-five sorts. Many of these were also excellent specimens. In Mr. Whiting's collection the Elford Pippin deserves especial notice. It is a small flat Apple, and seems to be a great favourite with that gentleman, for he has shown it on several occasions lately, and it has been invariably of very fine flavour. This is doubtless one of the best of our dessert Apples. Mr. Beasley, gardener to T. Wood, Esq., Acton, had fine specimens, both in appearance and flavour, of Blenheim Pippin, and also of Wyken Pippin, but his King of the Pippins were inferior. Mr. Earley, of Digswell, who was second at last meeting, had very nice specimens of the true Golden Winter Pearmain. Mr. Dungey, of the Gardens, Oakham Park, Ripley, Surrey, had fine specimens of the Ribston. Mr. Spivey, of Hallingbury Place, sent unusually fine specimens, both in flavour and appearance, of Margil; and Mr. Curd, of Sulhampstead, contributed beautiful examples of the true Cockle Pippin.

Class B was for the best dish of Huxley's Bergamot Pear, and for this new introduction there were three entries, Mr. Huxley himself having one; Messrs. Lucombe, Pince, and Co. the other. The specimens of Messrs. Lucombe were, however, the best in every respect, and consequently came in first, while the originator of the variety was himself obliged to take a second place. This remarkably fine Pear

henceforth the Prince of Wales. The former name was completely a misnomer, as the fruit possesses neither the shape nor any other feature of a Bergamot. It is, in fact, a long pyramidal Pear.

Class C was for the best dish of Huxley's Victoria, also a splendid Pear raised by Mr. Huxley. In this class there were four competitors, Dr. Scott, of Exeter, being first with splendid specimens covered over with fine warm cinnamon-coloured russet, and delicious in flavour; Mr. Huxley was again second, also with fine specimens, but not so richly flavoured as those of Dr. Scott. Messrs. Lucombe, Pince, and Co., had also excellent specimens, and unfortunately those of Mr. Gray, of Exeter, were rotten at the core.

In Class C, For the best dish of Josephine de Malines Pear, Mr. Spivey, of Hallingbury Place, near Bishop Stortford, was first with fine fruit, the flavour of which was equal to anything ever met with in that excellent variety. Mr. Cox, of Redleaf, was second, also with well-flavoured fruit, but not so rich in flavour. George F. Wilson, Esq., of Giahurst Cottage, Weybridge Heath, sent very large and handsome specimens from a tree grown in a pot in an orchard-house, but the flavour did not come up to either of the former. The other exhibitors were Dr. Scott, of Exeter; Mr. Samuel Ralphs, Walton-on-Thames; and Mr. Adlam, of Walton-on-Thames, but neither of these was at all possessed of any flavour.

A seedling Grape was received from Mr. Meredith of Garston, called Child of Hale. It produces an enormous bunch, with a stout woody stalk and a profusion of large round amber-coloured berries on very short and stout berry-stalks. The skin is thin, and the flesh firm and crackling, of the consistency of the Muscat of Alexandria, but without the flavour. It is very juicy and sweet, with a considerable amount of richness, but unfortunately the skin had a little astringency in it, which has prevented the Committee forming a favourable opinion upon its merits. It is evidently a variety that will hang in good condition to a late period, and when that astringency is absent it will be an invaluable variety, both for size of bunch and berry, for flavour, and for long keeping.

Messrs. Lane, of Berkhamstead, sent bunches of Barbarossa, Black Prince, Charlesworth Tokay, and Golden Hamburg from an orchard-house. They were all beautifully coloured and well grown, but the flavour was not developed except in the last, which was in beautiful condition.

Mr. Forsyth, gardener to Baron Lionel de Rothschild, Gunnersbury Park, exhibited two splendid Pine Apples, one the Smooth-leaved Cayenne, and the other Carlotta Rothschild.

Mr. Haywood, nurseryman, Worcester, sent stalks of a white Celery, which could not be distinguished from well-grown specimens of the Incomparable. Mr. Melville, of Dalmene Park, sent a hybrid Turnip between the Swede and the Yellow Stone, which, however, was not regarded as anything superior to what is already in cultivation; also a sprouting form of the Ulm Savoy, which is not equal to the Brussels Sprouts; and a seedling Brussels Sprouts, which is much too large ever to become a thing of any importance, seeing the desideratum in that vegetable is to procure it as small as possible.

SOME GARDENS WORTH SEEING.

WARWICKSHIRE.

Name.	Proprietor.	Gardener.	Station.
Combe Abbey.....	Earl of Craven.....	Mr. Miller.....	Brandon.
Stoneleigh Abbey.....	Lord Leigh	Mr. Ellworthy...	Kenilworth.
Newnham Padox.....	Lord Denbigh	Mr. West	Rugby.

The beautiful ruins of Kenilworth Castle are close to the Kenilworth station, and well deserve a visit from the tourist.—P. M., Fulham.

MISTLETOE.—In your Journal of 24th November, page 419, you ask for any information of Mistletoe growing on other trees than the Apple, Thorn, Poplar, and Lime. There is in the churchyard here a fine large bunch of it growing on the Acacia and a quantity of it on the lawn adjoining.

the only specimens I have seen in the southern part of Devonshire. The Apple-orchards are free from it.—*West Oggwell, near Newton Abbot.*

WHAT ANIMALS ARE POISONED BY THE YEW?

"A. J. G." all last summer turned two cows into a small field with a large Yew tree in it, being informed by the man who had charge of them that it was a "bearing Yew tree," and not poisonous. It produces no berries. These cows take delight in eating anything they are not intended to have. So "A. J. G." has little doubt that they ate many small branches of the Yew, and certainly they were none the worse. An old horse spends most of his time in the same field.

How does this agree with the advice given in THE JOURNAL OF HORTICULTURE for the 1st of December, in which a correspondent, "G. B.," is advised to fence off Yews from sheep? On Mickleham downs there are quantities of Yew trees, and "A. J. G." has seen flocks of sheep grazing among them safely. On the other hand, "A. J. G." sent a cart drawn by a donkey to fetch some turf from neighbouring downs. The donkey ate Yew branches and leaves, and died the next day, evidently poisoned.

The country people persist in saying that the Yews which have no berries are not poisonous, and "A. J. G." will be much obliged if the Editors of THE JOURNAL OF HORTICULTURE will say whether this is truth or folly, for "A. J. G." is anxious to let poultry run on a piece of ground where there are several Irish Yews, but is afraid to do so on account of the berries.

"A. J. G." also begs to have two kinds of good late Strawberries recommended for planting under a north wall, and would prefer one kind to be a respectable old-fashioned sort, which can be relied on, being rather out of conceit with novelties at present, in consequence of a failure in growing *Spergula pilifera*.

[You cannot have two better late varieties of the Strawberry than the Elton and Frogmore Late Pine.

With reference to the Yew being poisonous, no fact is more certain than that some animals, and under some circumstances, have died from eating either the berries or the leaves and twigs; and this being so, though similar animals and apparently under similar circumstances, have not been so killed, yet he is unwisely venturesome who subjects them to the risk. We will quote a few testimonies. White, of Selborne, states an instance where barrow hogs and young sows were maimed by eating Yew berries; but sows suckling their young often died after devouring the berries. Gilpin relates instances of horses tied to a Yew hedge being killed; and in the Isle of Ely he had nine of his own young bullocks killed by browsing on a Yew hedge; and knew of a whole dairy of cows killed by eating Yew clippings. Yet, he adds, sheep and turkeys, and, as park-keepers say, deer will crop this tree with impunity. Children eat the berries without inconvenience, and so do fieldfares; yet Withering tells of three children having been killed by a spoonful of the green leaves, and sheep, he adds, have been killed by eating the bark; and many instances are recorded of persons killed by drinking a decoction of the leaves. We shall be glad to receive information upon the subject; but after the above testimony we should avoid turning any agricultural animal into a field where it could partake of any part of the Yew. We should not fear turning poultry into such a field.]

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

DIPTERACANTHUS AFFINIS (Splendid *Dipteracanthus*).—*Nat. ord.*, Acanthaceae. *Linn.*, *Didymia Angiospermia*. One of the most beautiful of Acanthaceae plants. Native of Brazil. Introduced by Messrs. Henderson, Wellington Road Nursery. Flowers scarlet, blooming in July.—(*Botanical Magazine*, t. 5414.)

ERIA MYRISTICIFORMIS (Nutmeg *Eria*).—*Nat. ord.*, Orchidaceae. *Linn.*, *Gynandria Monandria*. Pretty and fragrant. Native of Moulmein. Introduced by Messrs. Low & Co.,

Clapton Nursery. Flowers white, blooming in September.—(*Ibid.*, t. 5415.)

HELICONIA BREVISPATHA (Short-spathed *Heliconia*).—*Nat. ord.*, Musaceae. *Linn.*, *Pentandria Monogynia*. Probably a native of South America. Flowers yellow and scarlet, opening in a warm stove during the summer.—(*Ibid.*, t. 5416.)

LIGULARIA HODGSONI (Mr. Hodgson's *Ligularia*).—*Nat. ord.*, Compositae. *Linn.*, *Syngenesia superflua*. Native of North Japan. Believed to be hardy. Flowers bright yellow, blooming during July in a cool frame.—(*Ibid.*, t. 5417.)

ADENIUM OBESUM (Thick-stemmed *Adenium*).—*Nat. ord.*, Apocynaceae. *Linn.*, *Pentandria Monogynia*. Native of Aden. Flowers light pink, with dark pink margin. Requires a hot, dry climate.—(*Ibid.*, t. 5418.)

BURLINGTONIA DECORATA (Painted Neat *Burlingtonia*).—*Nat. ord.*, Orchidaceae. *Linn.*, *Gynandria Monandria*. Native of Brazil. Flowers white mottled with pink and purple. Blooms in October.—(*Ibid.*, t. 5419.)

FANCY PANSIES, raised by Mr. Dean, of Shipley. *Her Majesty*, two upper petals dark purple, white-edged; three lower petals dark blotched circled by purple, edge straw colour. *Prince of Wales*, three lower petals richly marbled with purple, yellow, and black; two upper petals light purple shaded off to a white edge. *Princess of Wales*, light straw colour, with a pale purple band within each petal, and dark blotch in centre of three lower. *Thomas Moore*, pale straw colour, each petal variously blotched with purple.—(*Floral Magazine*, pl. 173.)

GASTRONEMA SANGUINEUM.—Cape of Good Hope bulb. Flowers scarlet.—(*Ibid.*, pl. 174.)

CLEMATIS REGINÆ.—Cross between *C. azurea* and *C. lanuginosa*. Flowers purplish-blue.—(*Ibid.*, pl. 175.)

PICOTEES, *Colonel Clark*, rosy scarlet edged white, very clear, no bar. *CARNATION*, *Lord Clifton*, a pink and purple bizarre.—(*Ibid.*, pl. 176.)

CLEMATIS FORTUNEI.—Introduced from Japan by Mr. Fortune, and flowered by Mr. Standish, Royal Nursery, Ascot. Flowers white, very large, double and fragrant.—(*Florist and Pomologist*, ii., 169.)

STRAWBERRY, *Frogmore Late Pine*, "raised by that indefatigable hybridiser, Mr. Thomas Ingram, *Her Majesty's* gardener at Frogmore." Fruit large, varying from conical to cockscomb in shape, ripe at same time as the Elton, "but is far superior to it both in flavour and productiveness."—(*Ibid.*, 172.)

BERKHAMPSTEAD NURSERY.

SOME time ago we gave an account of this nursery, so deservedly celebrated for Roses, its collection of fruit trees, weeping or pendulous trees, standard evergreens—as Portugal Laurels, Rhododendrons, &c.; fine specimens of *Araucarias* and *Deodars*; its economical span-roofed houses, and economical heating by hot water, hot air, Polmaise stoves, &c. Our object in paying a visit in the end of September was to see a house of Grapes, most of which were then ripe. A good report of these had been brought to us, and we felt a particular interest in them, as we had the good fortune to see the Vines during the process of planting. Having frequently advocated drainage and a suitably made border for Vines, and having lately described how these processes are attended to in two of the best Grape gardens in the country, we think it is only fair that the readers of the Journal should know of a very successful case of Grape-growing where no attention whatever had been given to draining, and all the border-making was the simplest imaginable. The house is span-roofed, 126 feet in length and 27 feet in width, height to ridge about 11 feet, and at sides about 3 feet. The sides of the house face the south-west and the north-east. The ground on which it stands slopes to the east to a brook near the canal, and it is built on the slope. At the highest end of the house, as at c, fig. 1, there is an open spring well, the

Fig. 1.

A. level.

C. B. Slope.

water standing not more than 2½ feet from the surface, and

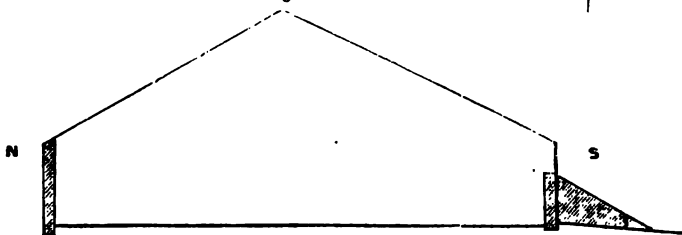
therefore higher than the surface of the lower part of the ground on which the house stands—just such a position as one would suppose that stagnant water would have to be guarded against.

When first we saw the house the sides were supported by stout larch poles, and a row of poles went along the middle to sustain the ridge-board. As far as we recollect, the house was either not a true span or the north-east side had the ground lower; and there the opening from the glass to the ground was filled, we think, with a hedge of Arbor Vita. The object of the house seemed chiefly to be to give the protection of dryness and of a still atmosphere to great numbers of things in winter. The south-west side was partly open and partly protected by such temporary means as bushes, mats, and in a few cases by louver boards, the roof being fixed in the regular orchard-house fashion.

In order to make the house a large storehouse for fruit trees in pots and many other things that required a little protection in winter, when Vines were planted on the south-west side they were placed from 4½ to 5 feet apart, that the usefulness of the floor of the house all the year through might not be impaired by the Vines.

Unfortunately we cannot lay hold of our memoranda as to the year—not very long ago—when these Vines were planted, and we forgot to ask Mr. Lane; but so far as we recollect, in forming a border for them there was not a spadeful of the natural soil touched or removed. We have already indicated that the ground on which the house stands slopes considerably eastward; and just in front of the south-west side it slopes a little towards the south-west, but not much. In planting the Vines for this open wall-less house all the preparations made were putting a good barrowload of fern above the natural soil, and then placing a few barrowloads of fresh loam from the common on the fern, and on this soil disentangling and spreading out the roots of the Vines. As the Vines grew, fresh soil with a similar bottoming was added; but even now the made border does not extend more than 5 feet in width, and presents the appearance indicated on the south side of fig. 2. The roots have no doubt extended much farther; and we should have supposed that they had pushed into the inside of the house as well as outside but for the following circumstance.

Fig. 2.



The very cold winters of 1860 and 1861 showed the necessity of having a more secure shelter at the sides, and, therefore, the deeper north-east side was walled up to the plate on which the glass roof rested. The south-west side was filled up partly by a wall and then with glass on the top of it. The foreman and Mr. Lane told us that they had found no roots inside of that wall, though the mounds of decomposing tan, sawdust, and litter inside would have been an inducement for the roots to revel in, if they had obtained the chance to do so. The very intelligent superintendent, who may well be pleased with the heavy crop of fine Grapes, is anxious that the wall should be cut into arches, or pillars, that the Vine-roots may be encouraged inward, making for them at first a small narrow border, and increasing the width as the roots occupy it; and then he would cut a drain some 12 or more feet from the wall outside, and put up a wall there below ground to prevent the roots going farther. He is afraid that unless something of this kind is done, and if similar heavy crops are taken, that the Grapes will be apt to shank or colour badly when a wet unfavourable summer comes. As the Vines are flourishing well, we feel persuaded that Mr. Lane will adopt at least part of these suggestions, merely as a preventive of that right proper unpleasant contingency.

These suggestions, however, apply to the future, and not to the present condition of the Vines, which have as yet received no coddling, except watering the narrow border several times during the summer with drainings from the dunghill, and covering it in September with short sashes of glass, so that the heated air might enter freely and yet the rains of autumn be thrown off. During the past summer for the first time, we think in July, two hot-water pipes have been taken round the house, which for the future will so far take away its purely orchard-house character. The help of these pipes in future will also assist in the thorough ripening of the fruit, the preserving it when ripe, the hardening of the wood, and the preserving still more securely the vast number of plants in pots stowed away here in winter.

We mention these little matters as likely to be interesting; but let it be recollected, that until July the Vines had no help except what was given in an open orchard-house, and from a small border of 5 feet in width made on the surface of the natural soil. The sight of these Vines in September was a very striking one, most of them being in full bearing, and they reached from the south-west side up to the ridge and down to the bottom of the north-east side. All were heavily, and many rather too heavily cropped, which in a few instances might impair their full colouring. The bunches in general were large, and the berries of full size. We measured some berries of Black Hamburgh somewhat at random, and found that they ranged from ¾ inches and more. We counted the bunches on a number of Vines, and they numbered from thirty to forty on each Vine. On one fine Black Hamburgh Vine we counted them particularly and found forty-three bunches, and some of these were very large. We are sure that these forty-three bunches would average 2 lbs. each. Notwithstanding such a heavy crop the Vines seemed in full health and vigour, showing that the roots were not idle somewhere. As one evidence of their vigour, we may mention that some shoots laid into pots at the far end of the Vines on the north side were making splendid canes of wood, receiving a little additional help from the pot.

The kinds thus planted outside and grown across the house from side to side were Black Hamburgh, Mill Hill Hamburgh, Dutch Hamburgh, Pope's Hamburgh, Golden Hamburgh, exhibiting a little tenderness in the foliage, showing that a slight shade in summer would be useful;

Muscat Hamburgh, the bunches large, thick set, and the berries squeezed against each other, having grown too large for the thinning given them, and which will be apt to interfere with their colouring fully up to the mark. In some places this Grape has set very badly this season. We think the low temperature may be an advantage. We should judge some of these perfect balls of bunches to be little under 4 lbs. in weight. Esperione was not colouring so well as others; Black Prince, West's St. Peter's, Frankenthal, Buckland Sweetwater, and Barbarossa, had fine large bunches, but berries much smaller than other varieties, and looking

as if they would need the hot-water pipes to ripen them. It will be noticed that, with the exception of the Barbarossa, most of the others would come in about the same time—a matter often of importance in a commercial point of view; but it is different in a gentleman's garden, where succession of supply is of greater moment.

So many inquiries are made whether anything can be grown under the shade of Vines, that we must mention what we found on the floor of this house. Of course it would be differently filled in winter. There is no attempt at nicety in the internal arrangements. The most of the plants in pots were plunged in mounds of sawdust, but so moved (as on inspection we found), that the roots should protrude little or nothing. Here we observed some excellent Figs in pots, chiefly the Grand Florentine, a beautiful large Fig; the White Marseilles, the prolific variety, than which none is richer; the well-known and prized Brown Turkey; and the small, sweet, White Singleton, a good old Fig under a new name, but having the fault that it seldom yields a good first crop however treated—at least we have found it so often that was agreeable. With good pinching, however, the second crop comes early, and generally sticks on as if fastened mechanically.

The most striking objects, however, on the floor of the

house and in these mounds of sawdust, were Vines in pots, mostly in what are called No. 8-pots, the Vines being trained round three or four stakes; and though many of the earliest kinds had been partly cut, the Vines averaged from five to eight bunches to each. We counted eight fair-sized bunches on several Black Hamburgs; noticed some very good Buckland Sweetwater; also some fully ripe bunches of the Early Malingre, a very early medium-sized White Grape, well worthy of being more generally grown; West's St. Peter's, about eight good bunches; Royal Muscadine, nearly all cleared, but showing that there had been a good crop; White Frontignan, nice bunches and good berries; and Prolific Sweetwater, which seems to set freely and thickly. Charlesworth Tokay, Trebbiano, Muscat Trévère (new to us), and Bowood Muscat, set well. Canon Hall Muscat, Tokay, and White Nice were not ripe, showing that they would need more heat and time. We noticed also fine berries of Kempsey Alicante, Lady Downes', Trentham Black, and Bidwill's Seedling, resembling, but seemingly earlier than Black Prince. We also observed near this very fine specimens of Comte de Lamy Pear, also the Vicar of Winkfield Pear, and fine plants in pots of Angelina Burdett Plum; but Mr. Lane exhibits fruit trees in pots so often that we need not further allude to them here.

In other houses we noticed great numbers of beautiful Fig plants in pots with good Figs on them, so that there could be no mistake about the sorts; and several houses, such as the large Polmaise-heated Rose-house, were filled with thousands of Vines—some treated for fruiting next year, and others standing as thickly as the pots would stand, with wood reaching to the roof and beyond, wood and roots being the chief objects aimed at for mere planting out.

Go where you will—to Berkhamstead, to Sawbridgeworth, to Cheshunt, to Messrs. Veitch, Lee, Glendinning, Osborn, &c., and take a peep through the metropolitan, the suburban, and the country nurseries—and young Vines not in thousands but millions will meet your gaze. "Where do they all go to?" is what we feel inclined to exclaim until we see the vast number of little glass houses rising by the side of even small dwellings, and all wanting their few Vines, not only for the pleasure of eating the fruit, but enjoying the many legendary and poetic associations connected with it. We know of nothing that tells more of the progress our country is making in wealth and refinement than the sight of these innumerable Vines, in connection with the fact, that in many of our nurseries the sale is so immense that the proprietors have to look sharply after buds for propagating. If we live long enough we shall see the day when in the suburbs of large towns and in the streets of country towns such houses as will be tenanted by tradesmen and well-conducted mechanics; will each of them have their little greenhouse between or attached, so that in quiet meditative moments their inhabitants may literally "sit under their Vine and under their Fig tree." With continued peace and the increase of temperance and prudence, there is nothing to prevent the hardest workers in our mines, foundries, factories, and workshops having homes resembling little paradises.

Passing over all the varied contents of the nursery with merely noticing that the Rhododendrons flourish in the natural loam of the grounds at the common, and that among the large quarters of fine Arancarias there are two or three so compact and beautiful as to be worthy of being photographed and engraved, we shall proceed, in answer to many inquiries, to say a few words on the Polmaise and brick-stove heating, and the modes of propagation adopted in some houses built since our last visit.

The large Polmaise-house is heated as effectually as it used to be, and without adopting the principle thoroughly, it is partly carried out in most of the arrangements for heating. Thus we formerly described a long house 100 feet in length, built on the steep incline of the ground, as in

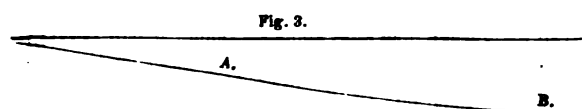
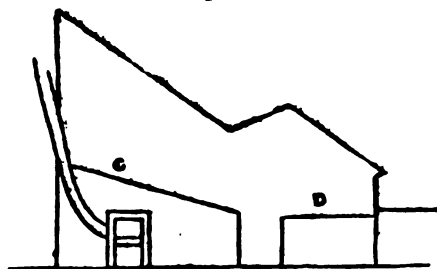


Fig. 3.

fig. 3, A. This house has a peculiar roof as if made of odds and ends, as shown in fig. 4. c and d are two beds with a

rather deep pathway between them, the beds and the path being on the same slope as the ground. The brick stove is placed at the lower end, B, fig. 3, and a pipe is taken from it for a short distance along and then out at the back wall, as shown in fig. 4. Everything seems to thrive well in this

Fig. 4.

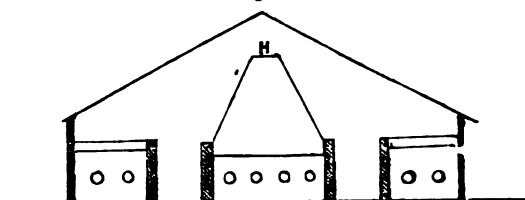


house, and this single brick stove keeps it warm enough for what is wanted. Here there is no regular carrying out of Polmaise, and yet its principle is brought happily into action. The very singular construction of the roof also helps it, as it divides the currents of heated air as they pass along near the glass to the further end, nearly 100 feet, and then the air, falling down as it cools, is brought by the heat of the stove along the path to be heated again and sent along its former course. This circulation will to a certain extent take place in any house however heated, but there can be no question, that the slope of the ground, and consequent slope of roof, the slope of the deep pathway, and the placing of the brick stove at the lowest point, all unite in making the circulation more uniform and equal. As the stove stands free of all walls but its own, the heat from the fuel is freely radiated from all sides. No other plan that we know of could approach this in economy, and the consumption of fuel we can well believe to be very trifling.

Close to this house the chief novelties were some glass-roofed lean-to sheds, which in addition to providing comfort when working in bad weather, would be found convenient for storing many plants in winter; and there were also several beautiful beds of the most popular shrubs arranged according to their foliage in lines in ribbon fashion, and also some quarters of Yew grafted, 5 feet in height, with the Silver and Golden varieties.

The largest propagating-house is not more simple than complete and effectual. See fig. 5. It is 60 feet in length and 20 feet in breadth, and divided lengthwise into three beds by two pathways a little more than 2 feet wide. The house is span-roofed and 10 feet in height to the ridge. The beds are separated from each other by brick walls, 3 feet in height, at the sides of the pathways. The side beds are 4 feet wide. Each of these is heated by two four-inch pipes in a chamber beneath. That chamber is covered over with slate resting on iron cross-bars. Sand is mostly laid on the slate for placing or plunging the propagating-pots in. These are covered over by moveable short sashes, represented by the upper line. The wall that separates the bed from the pathway has openings in it alike for heating the atmosphere of the house and securing the circulation of the air. The smaller openings *r*, at fig. 6, let in the cold air from the path, and are placed some 2 feet apart. The larger openings, *g*, are furnished with slides, and are placed some 4 or

Fig. 5.



more feet apart, so that by them the bottom heat and the atmospheric heat may be regulated at will. The dry or moist heat given to the cuttings can be regulated to a nicety by the dry or moist condition of the sand. The centre bed

them, as it is a great waste of the virtues of the manure, and dries it too much. We prefer beating hard, which, by excluding air, soon checks the heating arising from rapid decomposition. If the manure is too wet, then adding a little cut straw and throwing it in a heap would even be better than riddling the bed with holes, though in such a wet state the making holes or boring all over is more permissible. Were we spawning such a damp bed we would wrap each piece of spawn in a good handful of dry short litter, but preferring straw and rejecting hay litter as more liable to damp. We have used clean straw for such a purpose, but we prefer that which is broken, such as may be collected near a manger, or in a shed where horses or cattle congregate for food and shelter.

FRUIT GARDEN.

Having raised the roof in Fig-house as well as plant-stove, made a rough trellis about 18 inches from the glass to give what support may be necessary, and keep the shoots out of the way. Hitherto the plants have been trained chiefly in bush fashion; but even then a little support was necessary to keep the fruit in the best position. Protected Strawberries from one frosty morning. All not protected have the pots laid on their sides, and can be protected by litter in a few minutes. Sprinkled Vine-shoots in small narrow pits, and kept the evaporating-pans filled with manure water. We should not care how rank this might be for Vines, but the pits are filled with plants, and, therefore, we have the water more mild than there would otherwise be occasion for before the buds broke. For general purposes we know of nothing better for this manure water, when used for evaporation, than strong clear soot water. This may be made by mixing a bushel of soot and a spadeful of quicklime in 36 gallons of water, or even 52 gallons, with a cover to the barrel. The scum taken off such water will be bright as the finest old ale, and will throw off a good portion of nitrogenous matter without hurting, as far as we have found, the tenderest plants. We have made a paste with the soot in the evaporating-pans and then filled with water, but this clogs the evaporating-receptacles in time, and when convenient we prefer the previous mixing. No insects like the fumes from such water, and we have found that few or no plants dislike it. Went on pruning and nailing as the weather would permit. Now is still a good time for all kinds of planting, as the ground is still warm. Cuttings of Gooseberries, Currants, &c., should be made in wet days, but should not remain long unplanted. Other matters much the same as in previous weeks. With all our care the leaves must be removed from the late vinery, the Grapes in which are still keeping very nicely.

ORNAMENTAL DEPARTMENT.

We have begun regulating some of the herbaceous plants, and digging and trenching-up the beds and borders for bedding plants. Being scarce of well-rotted manure of any sort, our practice for several years has been to dig, or rather trench, pretty deeply, but leaving the bottom spit at the bottom, and keeping fully three-parts of the surface at the surface still, in order to reap the advantage of the little manure that was placed near the top. This deep stirring we believed saved us from scorched beds last summer, when for two months we had not enough of water for pot plants, and everything outside had to take its chance. Many an afternoon the Calceolarias especially looked woe-begone, but they mostly were all right again the following morning. We had satisfied ourselves that this deep stirring was just as effectual in preventing extra luxuriance in damp and wet seasons. This season, in order to bring a little fresh soil to the surface, we will stir as deeply, but will bring up more of the under soil to the top, will let it be exposed all the winter, will turn it once or twice, leaving it as rough as possible, and in early spring will cover the surface with some leaf mould, and keep that in turning not far from the surface to encourage active growth at first. All such changing of the surface should be done gradually. We recollect of a large piece of a waste being trenched for planting trees, and after several failures this ground had pretty well to be trenched back again before anything would grow, so that the expense of such trenching was worse than labour lost. Had the ground been deep ploughed, or if even fair-sized holes had been made, or the surface spit well broken, and the bottom then well picked up, and left there, could have been

no doubt that trees and anything else would have done well. A case came under our notice not long ago of deep trenching, where some 8 inches of hungry clay and iron marl were brought to the surface, to the discomfort of everything and everybody. If well stirred at the bottom and an inch or two brought to the surface, it would have been sufficient.

As soon as we can we will plant a border with bits of *Cerastium*, variegated *Arabis*, &c., for edgings, as it is as well to have rooted plants to go to, and they will root nicely before April. The hardier *Roses* may now be pruned; the more tender *Perpetuals*, *Teas*, &c., had better be unpruned until the end of March or the middle of April. A little leaf mould put over the roots of the latter, and evergreen boughs stuck over the bed, will much protect them against cold. Such branches or fern may be tied round the heads of standards budded on the Dog Rose, &c.; but for nice plants of *Teas* and other tender kinds, and dwarfs in a bed, no plan is better than taking them up carefully and planting them in a bed in a shed, or against a fence, and thatching them up, taking them out and planting in the beginning of April. When used to it, they will hardly seem to notice the moving more than its securing for them moderate growth and well-ripened wood. Bulbs may now be potted for succession crops. Those coming into bloom in the forcing-pit or frame should have more air, and the pots should be gradually raised out of the hotbed, that the plants may receive no check when taken to the greenhouse, conservatory, or window. In such mild damp weather it is desirable to put a fire on in the greenhouse during the day now and then, and to give extra air, letting the fire out before night. As little fire should be used at night as possible, even when there is a little frost. *Camellias* in full bloom will require a good amount of water. *Heaths* and *Epacris* will need abundance of air, and the soil must not get dry. The pots should be rung frequently with the knuckles to ascertain the state of dryness, and when nearly dry, enough of water at about 50° should be given to wet all the soil where there are roots. Early *Calceolarias* and *Cinerarias* will be less likely to be troubled with fly, if the pots stand on cool, damp moss. *Primulas* will need plenty of air to keep them from damping, and a little manure water will do them good; but it should be kept from the collar of the plant. The water should chiefly be poured round the outside, but so as to moisten the whole ball instead of drenching the collar of the plant. Now is a good time for placing hardy shrubs, as *Deutzias*, *Lilacs*, and *Rhododendrons* into forcing-pits or houses, and also *Roses*. It is best to begin gradually. In fact, for all these hardy things it is no bad plan to plunge the pots in a mild hotbed out of doors first. Damp must be looked after in all pits and frames, and we have plants in general kept cooler and drier than at other seasons. Of course, exceptions must be made as to plants in bloom and coming into bloom.—R. F.

HOMELY HINTS FOR MARRIED GARDENERS.—If you fail in raising the wind abroad, that is no reason why you should kick up a breeze at home. No soil favours the cultivation of spare time as well as the domestic hearth. Beware of hiding the family bread-basket in the public-house till. Keep your *Passion-Flowers* outside the walls of your homestead. If cultivated within doors, they are apt to scatter seeds of dissension around the family table.

COVENT GARDEN MARKET.—DEC. 12.

The supply continues unusually heavy owing to the mildness of the season, but prices continue much the same. In Apples and Pears there are no fresh varieties to add to those named in previous reports, and remarkably fine samples from abroad continue to be exhibited. Of Potatoes, heavy supplies are brought both by rail and coastwise, and *Finken* appear to be the freest from disease. Kidney Beans have just made their appearance. Cut flowers chiefly consist of *Roses*, *Pelargoniums*, a few *Oranges*, *Epacris*, *Violets*, *Wallflowers*, and *Christmas Rose*.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	1	to 2	0	Mulberries.....	quart	0	0 to 0
Apricots.....	0	doz.	0	0	0	Oranges.....	100	4	0 to 10
Figs.....	0	doz.	0	0	0	Pears.....	bush	8	0 to 12
Filberts & Nuts 100 lbs.	00	0	90	0	0	Pears.....	dessert	2	5. 5
Grapes, Hamburgh lb.	1	6	5	0	0	Fine Apples.....	½ sieve	2	0 to 6
Foreign.....	0	9	1	6	0	Plums.....	½ sieve	0	0 to 0
Muscats.....	3	0	6	0	0	Pomagrates.....	each	0	2. 6
Lemons.....	10	6	0	10	0	Quinces.....	doz.	0	0 to 0
Malons.....	dash	1	0	0	0	Violets.....	bush	14	6 to 20

VEGETABLES.

	s.	d.	a.	d.		s.	d.	a.	d.
Asparagus bundle	6	0	10	0	Leeks..... bunch	0	3	0	0
Beans, Broad..... bush.	0	0	0	0	Lettuce..... score	1	0	2	0
Kidney..... 100	3	6	5	0	Mushrooms..... pottle	1	0	1	6
Beet, red..... doz.	1	0	1	6	Must. & Cress, punnet	0	2	0	0
Broccoli..... bundle	0	9	2	0	Onions..... bushel	2	0	4	0
Cabbage..... doz.	0	9	1	3	pickling..... quart	0	6	0	8
Capicums..... 100	1	3	2	0	Parsley..... bunch	0	3	0	4
Carrots..... bunch	0	6	0	8	Parsnips..... doz.	0	6	0	9
Cauliflower..... doz.	2	6	4	0	Peas..... bush.	0	0	0	0
Celery..... bundle	1	6	2	0	Potatoes..... sack	5	0	8	0
Cucumbers..... doz.	6	0	12	0	Radishes doz. bunches	1	6	2	0
Endive..... score	1	3	2	6	Rhubarb..... bundle	1	0	0	0
Fennel..... bunch	0	3	0	0	Savoy..... per doz.	0	9	1	6
Garlic and Shallots, lb.	0	8	0	0	Sea-Kale..... bundle	1	6	2	6
Gourds & Pumpk., each	0	0	0	0	Spinach..... sieve	1	6	2	0
Herbs..... bunch	0	3	0	0	Tomatoes..... sieve	0	0	0	0
Horseradish ... bundle	1	6	4	0	Turnips..... bunch	0	3	0	0

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 162, Fleet Street, London, E.C.*

DESTROYING WORMS IN SPERGULA FILIFERA (T. A.).—Put two stones of lime in a hogshead, and pour seventy gallons of water upon it. Stir it well up, and let it stand forty-eight hours. Water the Spergula with the clear liquid by means of a rose watering-pot. Give a good soaking as in watering beds in summer, and it will kill many and bring a great number to the surface, which must be swept with a brush or broom. It is best applied in showery weather, as the worms are then nearer the surface; and the operation will be greatly assisted by rolling the Spergula plot with a heavy roller the night before applying the lime water. It may be necessary to repeat the application at intervals of once a fortnight for a short time. Ammoniacal liquor is a more effectual remedy; but it should be highly diluted with water, and even then it turns grass brown, and would no doubt do the same with Spergula pilifera.

GREENHOUSE PLANTS FOR SHOWING IN AUGUST (F. S.).—Yours is a very difficult question to answer, for though most plants have a certain set time as it were, yet their flowering depends in a great measure on the treatment given. Some need retarding, others forcing, to have them in bloom at a certain time. We give the names of eight, so that you may choose:—*Clerodendron Bungei*, *Crowea saligna*, *Erythrina crista-galli*, *Indigofera decora*, *Phenocoma prolifera* *Barnesii*, *Pteroma elegans*, *Statice brassicaefolia*, *Tremandra ericoides*.

KEENS ON STRAWBERRY CULTURE (C. S.).—Mr. Michael Keens was a nurseryman at Isleworth. He never published a work on Strawberry culture; but two communications from him on the subject were published in the "Transactions" of the Horticultural Society.

CELERY DISEASED (G. B.).—The leaves you enclosed were severely infested by the Celery fly. Pick off the worst parts and burn them. Soil sprinkled on the leaves whilst wet will prevent its attacks; but when once it gets hold of the plants there is no cure but burning the leaves.

PORTABLE STOVE IN A GREENHOUSE (M. S.).—We are sorry to say you could not have obtained a worse stove for your purpose than that which you have purchased. There is no combustible article that does not emit smells that vitiate the atmosphere; and, worst of all, we see nothing like a chimney in the engraving which you enclosed. We advise you to discard it, and have a fire, if you possibly could have such without setting the wood on fire. The air would not only be made too dry; but the escape of hydrogen and carbonic acid would be enough to kill everything in your greenhouse. If a small boiler and pipes are not too great an expense we would recommend that as the most effectual means of heating your greenhouse. If you were to have a pipe connected to your "hand stove," and that pipe communicating with the open air, so as to act as a chimney, you might then prevent a great deal of the danger to be apprehended from dryness by having an iron pan made to fit the top of the stove, which could be kept full of water. The water in the pan would be evaporated as fast as the stove heat dried the atmosphere. A fire, however, is better than a stove of any kind, and a boiler better than all.

GUANO WATER AS MANURE (Idem).—Two ounces of guano dissolved in a gallon of water may be applied to any description of crop with advantage. Two gallons at a time would be sufficient for an ordinary-sized Gooseberry bush, but it should be applied in the evening. A watering of this kind once a week would, we should think, enable you to grow Gooseberries better than most persons. Four ounces of guano sprinkled on the surface around your trees and slightly raked in would be washed down to the roots by rains. An application of this kind when the buds begin to swell, and another when the fruit is set and about the size of peas, would give them all they need, and do quite as well as watering the trees weekly. The waterings should be discontinued after the fruit changes for ripening.

HARDINESS OF COLEUS VESCHAFELTII (Idem).—It requires a rather warm greenhouse to keep it in good condition through the winter; but an ordinary greenhouse will preserve it sufficiently for affording a supply of cuttings in the spring. Keep dry at the root, moisture being the cause of the shoots dying back. We should think it will sprout again in the spring, only keep it dry, giving no more water than just sufficient to maintain vitality.

APPLES (Idem).—Alfriston is a good kitchen Apple, in use from November to April. If you wish for one coming into use earlier, Gravenstein is a useful baking Apple. For dessert, Red Astrachan, in use in August and September; Court of Wick, October to March; and Cox's Orange Pippin, November to February, are first-class eating Apples.

CELERY DISEASED (Bessie).—The Celery leaf shows marks of the punctures of the fly; but greater part of the brownness is occasioned by the leaves having been frozen. Sprinkle soil over the leaves, picking off the worst parts and burning them. After that earth the Celery well up, and spread some litter, fern, or stable, &c., over the leaves in severe weather.

RASPBERRIES (T. E. M.).—Both the varieties you name are good. We never grow them together, therefore cannot decide which is best.

BOTANY (Nemo).—For a beginner the best work is Hensley's "Rudiments of Botany."

MEALY BUG ON BIRCH TREES (F. W. S.).—You should have sent us, in a small card box by post, a piece of the affected bark. However, if you thoroughly paint the trunks of the trees, to the height affected, with the following mixture, it will probably remove the evil; but repeat it next year if any of the pest recurs. Mix 1 lb. flowers of sulphur, 1 lb. Scotch snuff, 1 lb. quicklime in powder, ½ lb. lamp black, 1 lb. soft soap into a liquid the consistency of paint by adding water to it.

TRAINING PEACH TREES TO A TRELLIS NEAR A SOUTH WALL (W. W.).—We fear that unless your situation is one of the most favoured ones in the kingdom, that you will not succeed well with Peaches trained on a trellis a foot or so from the wall. The trees at that distance will derive but little advantage from the wall, and we would advise you to plant the best kind of Pear, and perhaps one or two Plums instead of the Peaches you mention; or what would be better, could you not make terms with the owner of the wall to allow you to stretch your wires against the face of it? Very little harm would be done it by the few fastenings wanted, and your Peach trees would succeed better than if at a distance, for, as you will see by many reports in our columns, Peaches do not in all cases do well against open walls, so that many have resorted to the plan of covering the walls with glass. To attempt to train trees at a distance from a wall without any additional protection, can hardly succeed excepting under the most favourable circumstances, and even then only in certain seasons.

LEVELLING AND RELAYING TURF ON A LAWN (M. D.).—If your soil is rich it is most likely you will be annoyed with wormcasts in mild autumns, and these will be the more conspicuous if you keep mowing very short. As you are now relaying your turf we would advise about an inch of coal ashes under the turf as a partial remedy for this evil. Sand is not so good, but we have known old tanners' bark used under turf. Generally speaking, however, good ground produces the turf most free from daisies; but we are not certain but plantains grow more abundantly, and worms are more prevalent. Most sandy soils produce moss, which if not in too great abundance is an acquisition in the opinion of most people, although others object to it. If you reside in a moist neighbourhood you may use sand and indifferent soil with impunity under your turf; but if you suffer from summer droughts, and it be important to give your lawn a nice appearance, then let the understratum be good—if you have the means of making it so. Generally speaking, when alterations on the lawn are going forward, the best soil is reserved for beds or shrubbery borders, and we have often enough been obliged to make shift with very indifferent turf, and lay it too on ground anything but inviting; but it worked itself right in a year or so.

YEW HEDGES ON A CLAYEY SOIL (W. B.).—We do not think mulching as you speak of will be of any benefit, as this is merely used to retain moisture to newly planted trees in dry seasons, whereas your place you say is rather damp. The best plan, therefore, would be to take up the plants, if they are not too large, and excavate the site, say 18 inches deep and about 4 feet broad, and fill it in with a lighter soil containing a good proportion of stone, at the same time thoroughly draining the ground on all sides of the Yew hedge. If the coming spring and early summer be dry, mulching then may be of service, but if moist it will not be wanted. The clay you take out of the trench may be tamped to good account by being burnt in the manner frequently described, and any additional clay may be treated the same way. The charred substance so obtained will be of great service in imparting increased fertility to the stiff ground remaining, which may also be rendered somewhat better by the application of lime.

LATE PEARS SPOTTED AND DYING (J. B. B.).—The evil you complain of is by no means uncommon, and we do not think a wash, as you suggest, with Gishurst compound in the preceding winter will have the desired effect of preventing the decay. On the contrary, we expect the cause lies in the roots of the trees; and as you say the climate is a moist one, we would advise the trees to be taken up and planted on the surface, adding a large quantity of stones or other similar substances to the mixture they are grown in. Some varieties of Pears suffer more than others from the disease complained of, and it would be worth while trying more kinds than those mentioned. At the same time it must be borne in mind that the evil in most, if not all, cases arises from the roots, and to remedy that by laying the roots more dry will be one of the most likely means to effect a cure; and if the trees are not luxuriant we should manure the surface of the soil in early spring, and keep it mulched throughout the summer.

ELM TREES BECOMING VARIEGATED (N. A. B.).—There have been many speculations as to the cause of variegation in plants. Some attribute it to disease, others to the absorption of water in a state of decomposition, and others to light and electricity. We do not profess to say if any, or which, of these is the cause; but there can be no doubt that variegation is induced by a peculiar condition of the plant's structure, which is acted upon by light, and produces various shades of colour in the leaves, which is termed variegation. In some plants the colour is red, others have white or gold variegation, but not all are acted upon in the same way by light. For instance, *Crotons* lose their variegation when shaded, whilst *Caladiums* require shade. Variegation evidently decreases the vigour of any plant, and variegated plants are more tender than those which are not so; but we do not consequently attribute variegation to disease, for variegated plants have as healthy constitutions as green-leaved plants. Variegated plants, in some cases, have a tendency to return to the original condition, but the fact remains that some plants never exhibit that tendency. Some variegated plants refuse to seed, others increase readily that way. The year 1860 was very productive of variegation, and that was a year of unusual wetness and cold, so that plants grew badly and failed to ripen the growths made. We have varied colours among cattle, and as these colours are dependant on the parents, it seems to us that variegation is a natural process, and we cannot tell the reason; nor why some fowls have feathers of one colour, whilst others have various colours, and that upon the same feather. Hares become white in some countries in winter, and when the skin of an animal is destroyed the hairs upon the same place invariably come white. Disease appears to us to be the opposite of variegation.

PAINTING CONSERVATORY (N. W.).—It will not injure the plants. **NAMES OF PLANTS (M. H. E.).**—The Fern is *Asplenium fabellifolium*, and the others are—2, *Tortula muralis*; 3, *Evernia prunastri*; 4, *Parmelia parietaria*; 5, *Ramalina fraxinea*; 6, *Parmelia saxatilis*. (J. L. C.).—1, appears to be top of frond of *Asplenium Delavayi*; 2, *Adiantum pubescens*; 3, *Celia sublanata*. (*Ignoramus*).—1, *Erica byemalis*; 2, *Erica persicula*; 3, *Erica pubescens*; 4, *Eparis impressa*. (*A Constant Subscriber*).—*Hypnum fulgens*. (J. B. H.).—1, *Abutilon venosum*; 2, One of the *Alonsoas*, but too much perished to say which—probably *urticifolia*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BUYER AND SELLER.

HAVING observed lately in your Journal many complaints and disappointments recorded by purchasers of poultry from private individuals, such purchases in no way answering their expectations, I think I can propound a scheme of the simplest character by which the interests of both purchasers and sellers would be entirely secured—that is, every one parting from their valuable birds may be sure of either receiving them back, or their money value when sent on approval, and need have no uneasy visions of the "Long Firm" while the negotiation is pending.

As an old poultry and pigeon fancier, I have been compelled at different times to purchase birds without seeing them, a plan I would recommend no one to adopt, and I cannot say that I have had reason to be satisfied with that mode. In more than one instance I have not received anything at all for money sent in prepayment, and I certainly think in most cases the purchasers may be considered quite as honest as the sellers—this is said in reference to the now general practice of demanding prepayment.

I do not think with the "WILTSHIRE RECTORY" that the public generally distrust advertisements, witness the daily supplement to the *Times*; nor do I think that any good could come from "a column set apart, &c., &c." (at a reduced price of course), vigilantly excluding all dealers, as suggested by the "EXHIBITOR (and no doubt dealer) IN A SMALL WAY." Who, indeed, shall decide who is a dealer when every one deals more or less if he can? Why, what are the people who would fill that half-priced column but persons anxious to buy or dispose of their surplus stock? No, what the public require is some guarantee or security, where prepayment is required, that they will not be deceived by misrepresentations, and that they may be sure of receiving a fair value for their outlay.

This could be very easily carried out by establishing in London, as most central, a "poultry protective agent," to act for both buyer and seller, and to whom all payments, as a sort of stakeholder, could be made. Then, when a buyer required a lot of birds to be sent on approval, he would forward to the agent the amount of their value; the agent would then acknowledge the receipt of the money, and request the owner to forward the birds direct to the purchaser (this would save trouble to the agent). If the birds were approved the purchaser would inform the agent, who would pay over the money to the seller, making such deductions for carriage, &c., as might be previously agreed on. If the birds were not approved of the same form would be gone through, only that the birds would be sent back to the owner, and, after their safe arrival, the agent would return the money to the proposed buyer, deducting such fees as might be agreed on. This would terminate the transaction, and no one would have to complain that he had been deceived in the quality or defrauded of his property.

It may appear on paper a troublesome process, but in reality could be carried out very easily; and I think when the amount is considerable, few would object to take this trouble, any more than they do to the "formality of an advertisement" to obtain anything of choice quality.

I think if the subject were fairly gone into, others might offer their opinions on this much-versed question, and some arrangement speedily come to. The only person I know of in London, who would be suitable for such an agency, is Mr. Stevens, the poultry auctioneer, who probably would be willing to undertake it if suitably remunerated for the trouble, &c. This would not entail more than writing two or three notes with postage, and which a fee of 3s. with 5 per cent. on the purchase money, whether sold or not, would cover.—ONCE BIT TWICE SHY.

[Another correspondent, "A. N. B.," makes a similar suggestion, but proposes that the Editors of this Journal shall be the protective agents. It would involve more writing and occupation of time than the Editors could sacrifice.]

CAPTAIN HEATON'S COCHIN-CHINA FOWLS AT THE BIRMINGHAM SHOW.

ALLOW me to correct an error made by your correspondent, "SMALL FRY." He asks:—"How the astounding fact arose that Captain Heaton, to whom both the Silver Buff Cochins cups were awarded on the Saturday, and his friend, Mr. Kelleway, the breeder of the greater portion of the Cochins fowls the Captain then exhibited, were permitted to view the Poultry Show on the Saturday, in flagrant violation of such arrangements?" Your correspondent would evidently deprive me of a great part of the honour of my victory. I beg to state, for his especial benefit, that out of the fifty Cochins exhibited by me at Birmingham, only thirteen were from Mr. Kelleway's yard, the remainder from my own. As to his charge against the Birmingham Committee, I will leave the matter in better hands than mine; I can only say, that I am not aware that any favour was granted to me or Mr. Kelleway, we merely followed many others who entered the poultry department before we did.—HENRY HEATON.

RAILWAY ARRANGEMENTS AND POULTRY EXHIBITIONS.

AMONGST the many suggestions lately made by "ECONOMY" and others as to poultry shows and poultry, the following, *inter alia*, will not be out of place:—I think one of the largest items connected with the expenses of exhibiting is carriage of poultry to and from shows. Some Secretaries have, with commendable foresight, obtained from the respective railway companies connected with their exhibition a free transit for the poultry to and fro, and, I think, they have added by doing so a great attraction to their prize schedules—in fact, at once lessening distance between north and south, east and west, and giving opportunities to those who otherwise could not show. I feel sure that did Secretaries of shows secure this privilege, even of returning poultry from exhibitions free, they would find the number of entries increased; and through the medium of your Journal I beg to offer this suggestion to them, which I hope will be received, approved, and acted upon.—MIRIAM.

DARLINGTON EXHIBITION OF POULTRY.

WE can with the most perfect confidence assure our readers, that the Darlington Show just closed has not only very far exceeded all others hitherto held under the auspices of this Society, but also proved itself quite able to hold equal rank with the most noted of our poultry meetings elsewhere. The earnest determination of the managers "to do everything they possibly can for the benefit of each exhibitor, but to show no partiality to any of them above their fellows," has doubtless contributed very materially to produce the amount of public confidence now so freely given to this great Exhibition. Scarcely a county exists that did not this season send admirable specimens of poultry to Darlington. First-prize birds from all our most noted shows stood here side by side. Such pens having previously secured their local honours, the owners, now wishing to determine their actual perfections, brought them together as antagonists, in many instances for the first time; a whole host of silver cups of the actual value represented being the coveted objects of their ambition. From these especial causes not only were the classes heavy as to the numbers exhibited, but almost without exception of so perfect a character, that the Judges had a duty to fulfil the very opposite of a sinecure. This year the poultry were exhibited in the recently erected Market Hall, at Darlington, which proved itself a most suitable building, and consequently far in advance of the temporary erections that hitherto have been the only ones available to the Darlington Committee. Mr. Turner, of Sheffield, provided the Society with his well-known exhibition pens, so that a better oppor-

tunity of displaying to advantage every pen could scarcely be wished for. "A fair field and no favour" being thus made the order of the day, we proceed to note down a few of the leading features of this Exhibition. Black Spanish fowls were the first variety that met the eye of visitors on entering. To sum up facts with brevity, both the classes, whether for old birds or chickens, were beyond question the most praiseworthy that ever yet have been seen at any poultry exhibition. They were indeed marvellous classes, and long, very long, we hear, were the Judges in arriving at their conclusions of relative perfection. In no case was this more apparent than in the awarding of the silver cup to the best pen irrespective altogether of age. Certainly a sad length of time was absolutely wasted in this selection. In vain did the Judges endeavour to pick faults either way, the adults and chicks of 1863 being so perfect that complaint of either was undoubtedly to find fault without occasion. The condition also of either pen was unexceptionable. It was most probably the severest "tie" that ever occurred at any poultry meeting; and, as was justly observed, "to give the cup to either in preference was an absolute injustice to the defeated; but as the cup could not be divided, a selection however undesirable must be made." Simply on account of the difficulty of finding chickens able to hold their own in perfect Spanish classes against old birds, the result was finally determined in their favour. Our readers may form their own opinions of the annoyance to the Judges at this vexatious delay, when it was afterwards ascertained both of those closely matched pens actually belonged to the same exhibitor—the Right Hon. Viscountess Holmesdale. Of course the Committee are quite exonerated from all blame; their duty was scrupulously to prevent any knowledge of facts as to proprietorship coming either directly or indirectly to the Judges, and honestly and to the letter did they carry out this duty. No doubt they regretted the evident downright "fix" of the Judges as much as the gentlemen who were officiating.

To say not a single pen of Spanish fowls was shown without great merit is simply stating a most indisputable fact; nor is it less true that those lovers of Spanish fowls who unfortunately missed seeing these classes this year at Darlington will most probably live long before such an opportunity again occurs. Referring to the prize list, amateurs will find scarcely a pen of Spanish fowls exhibited unnoticed. The Grey Dorkings were excellent throughout, but many of the best pens were evidently overtaken by frequent exhibition. Mrs. Ferguson Blair here took the cup with a grand pen well shown of adult birds. The chicken Dorkings were especially good throughout. The Show at Darlington gave incontestable proof of the injury done to birds by frequent exhibition, even as applied to that extraordinarily hardy race of fowls, the *Cochins*. If they are to be always on travel they must always have attention lavished on them in proportion. In *Buff* Mr. Bates, of Birmingham, "justly ruled the roast" with birds of not only very superior character, but also in perfect condition; Mr. C. T. Bishop, of Nottingham, being a very close-treading second prize, the Birmingham cup pen only attaining a commendation. In *Buff* chickens Mr. C. T. Bishop took precedence of all comers, Captain Heaton being the winner of the second prize. In *Cochin-China* fowls, any variety, there was a capital muster. Here, somewhat unexpectedly, a pen of remarkably good White ones, exhibited by Mrs. Blair, took not only first prize, but the cup for *Cochins* also. In this class Mr. Stretch showed a particularly good pen of Partridge-coloured ones, which took the second premium. Captain Heaton's first-prize pen of a pair of *Cochin* pullets are worthy of especial mention, as also his excellent single cock that was equally successful. In the class for *Single Cochin* Cocks it has never fallen to our lot to notice so evidently wrong statements as to age as was then apparent; but perchance this was from some mistake in packing. In these days it will hardly pass muster to show as chickens certainly birds of full two and perchance three years old. The *Bantams* were good throughout. The *Game* classes were of a regular, capital, first-rate character as we only rarely meet with, and this condition was no mean feature in securing the Darlington premiums. Messrs. Fletcher, Adams, Billing, Sunderland, Perkins, and Binns sent poultry in these classes that were head and shoulders in feather, and

evidently fresh from master-walks. Mr. Fletcher, of Manchester, added considerably to his plate-winnings at Darlington; and each winner of even a commendation in such competition has much to be proud of. So good were a pen of Black-breasted Red Game pullets, that they took a silver cup against their male rivals. *Hamburghs* were decidedly better than customary, this district being proverbially their home. The Spangled varieties showed to most advantage, the Silver-pencilled being the next approach to perfection. The *Bantams* were mostly good. In the *Variety* class a splendid pen of La Flèche fowls sent by Mrs. Blair deservedly outshone all rivals, the Crève Cœur being the only near competition. The *Selling* class, limited to a prohibitory price of 30s., was well filled, contained capital pens, and many changed ownership.

In *Aylesbury Ducks*, as usual, Mrs. Seamons, of Aylesbury, left all in the rear. It seems as though, in spite of rivalry, this lady possessed some mode of management unknown to others. In *Geese* Mrs. Ferguson Blair took first prize and silver cup with a pen of perfect Greys weighing 52 lbs.; her mixed medley lot of all colours that won first at Birmingham so recently, however, were passed over entirely. The *Turkeys* were equal to any we have seen for some years past—a glorious lot, bringing to recollection the close approach of Christmastide, when family reunions bring happiness to all around, and smiles and blessings reign supreme. If, however, some of our forefathers, who presided at the festal board a century gone by, could behold a more than thirty-pound-weight Turkey poult smoking ready for the carving-knife on the 25th instant, perhaps their appreciation of the improvements of modern times in poultry would be as bewildering to their ideas as would be the recognition of our advance in locomotion. After all other reasonings, such facts tend more than all others to the popularity of poultry shows.

SPANISH (Black).—First, Right Hon. Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Second, S. Robson, Brotherton, Burton Salmons, Yorkshire. Highly Commended, R. Teesbay, Fulwood, Preston; J. Shorthose, Newcastle-on-Tyne; J. W. Smith, Oundle, Northamptonshire; E. Brown, Sheffield. **Chickens.**—First and Cup, Right Hon. Viscountess Holmesdale, Linton Park, Staplehurst. Second, Master A. Ridpath, Edinburgh. Third, J. R. Rodbard, Wrington, Bristol. Highly Commended, S. Corner, Fulwell, Monkwearmouth; J. Clews, Walsall; J. K. Fowler, Aylesbury; S. Robson; R. Teesbay; H. Reidou, Blingley. Commended, J. Mills, Stockton; E. Brown, Sheffield.

DORKINGS (Coloured).—First and Cup, Mrs. F. Blair, Balthayoke, Inchmurrine, Inchture. Second, F. Benson, Boroughbridge. Highly Commended, Rev. J. F. Newton, Kirby, Stokesley; Mrs. F. Blair; J. Robinson, Garstang; Right Hon. Viscountess Holmesdale, Linton Park, Staplehurst. Commended, Mrs. M. Seamons, Hartwell, Aylesbury; G. C. Whitwell, Kendal. **Chickens.**—First, T. E. Kell, Wetherby. Second, Right Hon. Viscountess Holmesdale. Third, Rev. J. F. Newton. Highly Commended, J. Bell, Thornton-le-Moor, Northallerton; D. Parsons, Guernsey, Preston; Mrs. F. Blair; W. Dolby, Tunbridge Wells. Commended, F. Kay, Boverley; F. Benson; Rev. J. F. Newton.

DORKING PULLETS (Any variety).—First, Mrs. F. Blair, Balthayoke. Second, W. Dolby, Tunbridge Wells. Highly Commended, C. Pease, Southend, Darlington; Mrs. F. Blair. Commended, Mrs. Craigie, Chigwell; E. Whitwell, Darlington; J. Bell, Thornton-le-Moor.

DORKINGS (White).—First, Rev. G. Boynton, Lowthorpe, Hull. Second, C. Pease, Southend. **Chickens.**—First and Cup, J. Robinson, Garstang. Second, C. Pease. Highly Commended, C. Pease; E. Whitwell, Darlington; D. Parsons, Guernsey.

COCHIN-CHINA (Cinnamon and Buff).—First, H. Bates, Birmingham. Second, C. T. Bishop, Lenton, Nottingham. Highly Commended, T. Stretch, Ormskirk. Commended, Captain Heaton, Lower Broughton, Manchester. **Chickens.**—First, C. T. Bishop. Second, Captain Heaton. Commended, T. Stretch, Ormskirk.

COCHIN-CHINA (Any other variety).—First and Cup, Mrs. F. Blair, Inchture. Second, T. Stretch, Ormskirk. Highly Commended, R. White, Sheffield. Commended, E. Tudman, Whitechurch, Selop. **Chickens.**—First, H. S. Stobart, Wotton Tower. Second, J. Shorthose, Newcastle-on-Tyne. Highly Commended, T. Stretch; E. Tudman.

COCHIN-CHINA PULLETS (Any variety).—First, Captain Heaton, Lower Broughton. Second, Rev. G. Gilbert, Oaxton, Norwich.

BEAUFORT POULTRY.—First and Cup, R. Teesbay, Preston. Second, J. Hinton, Hinton, Bath. Highly Commended, R. Teesbay; Mrs. F. Blair, Inchture. **Chickens.**—First, R. Teesbay. Second, Mrs. F. Blair. Highly Commended, R. Teesbay; F. Powell, Knaresborough. Commended, W. L. Barclay, Leyton, London.

GAME (Black-breasted and other Reds).—First and Cup, J. Fletcher, Stoneclogh. Second, M. Billing, jun., Birmingham. Highly Commended, J. Fletcher; G. C. Whitwell, Kendal; G. W. Evans, Darlington; M. Billing, jun. **Chickens.**—First, J. Fletcher. Second, W. H. Worsworth, Chesterfield. Third, H. Adams, Beverley. Highly Commended, G. C. Whitwell; M. Billing, jun. Commended, W. Bentley, Scholes, Cleckheaton; F. Parsons, Guernsey.

GAME (Any other variety).—First, H. Adams, Beverley. Second, J. Fletcher, Stoneclogh. Highly Commended, W. A. Wether, Sandhams Hall, H. Adams. **Chickens.**—First, J. Sunderland, jun., Colley Hall. Second, H. Adams.

GAME PULLETS (Any variety).—First and Cup, G. W. Evans, Darlington. Second, J. Fletcher, Stoneclogh. Highly Commended, W. A. Wether, Sandhams Hall, H. Adams.

berge Hall; C. Pease, Southend; H. Adams, Beverley; Miss J. A. Ashroyd, Bradford. Commended, W. A. Wooler; Miss E. Graham.
HAMBURGERS (Golden or Silver-pencilled).—First, Right Hon. Viscountess Holmestdale, Linton Park, Staplehurst. Second, H. Beldon, Gilestead. Highly Commended, S. Smith, Northowram, Halifax; J. Dixon, Clapton, Bradford.

HAMBURGERS (Golden or Silver-spangled).—First and Cup, G. Brooks, Huddersfield. Second, H. Beldon, Bingley. Highly Commended, T. Davies, Newport, Monmouthshire; J. Dixon, Bradford; S. H. Hyde, Ashton-under-Lyne. Commended, H. W. B. Berwick, Holmsdale.

HAMBURGH CHICKENS (Golden-pencilled).—First, S. Smith, Northowram. Second, J. Powers, Biggleswade, Beds. Highly Commended, Hen. W. T. W. Fitzwilliam, Wentworth.

HAMBURGH CHICKENS (Golden-spangled).—First, S. H. Hyde, Ashton-under-Lyne. Second, B. Boynes, Keighley, Yorkshire. Commended, T. Baroh, Sheffield; H. W. B. Berwick, Holmsdale.

HAMBURGH CHICKENS (Silver-pencilled).—First, Right Hon. Viscountess Holmestdale, Linton Park, Staplehurst. Second, C. M. Royas, Roehdale. Highly Commended, C. Moore, Poulton-le-Fylde, Preston; A. Nicholson, Walkley, Sheffield. Commended, H. Pickles, jun.

HAMBURGH CHICKENS (Silver-spangled).—First, H. Beldon, Bingley. Second, J. Robinson, Garstang. Highly Commended, W. Cannan, Bradford.

POLANDS (Any variety).—First, H. Snowden, Great Horton (Golden Poland). Second, J. Dixon, Bradford (Silver Poland). Highly Commended, H. Carter, Holmstirrh (Black Poland); J. Dixon (Golden Poland).

BANTAMS (Golden or Silver-laced).—First, H. Beldon, Gilestead. Second, J. Dixon, Bradford. Highly Commended, E. Yardley, Wisewood. Commended, G. Maples, jun., Wavertree, Liverpool.

BANTAMS (White or Black).—First, J. Dixon, Bradford. Second, Miss K. Charlton, Manningham. Highly Commended, W. T. Addison, Sunderland. Commended, J. Crossland, jun., Wakefield.

GAME BANTAMS (Any variety).—First and Second, J. Crossland, jun., Wakefield. Highly Commended, J. Cragg, Kendal; J. W. Morris, Rochdale; J. Riarlow, Deptford, Sunderland; R. Hawkley, jun., Southwell, Notts; Miss E. Crawford, Southwell; D. Parsons, Cuerdon; M. Billing, un., Birmingham. Commended, H. Taylor, Chesterfield.

SINGLE COCKS.

DORKING (Any variety).—First, F. Benson, Aldbrough. Second, Mrs. F. Blair, Balthayock. Highly Commended, C. Pease, Southend; Hen. J. M. O. Fowlett, Bedale; J. White, Waraby. Commended, C. Pease.

COCHIN-CHINA (Any variety).—First, Captain Heaton, Lower Broughton. Second, J. Shortrose, Newcastle-on-Tyne. Highly Commended, H. W. B. Berwick, Holmsdale.

GAME (Any variety).—First, J. Fletcher, Stonecrough. Second, A. Perkins, Darlington. Highly Commended, J. Fletcher; G. W. Bians, Darlington; H. M. Julian, Beverley; R. Swift, Southwell; H. Adams, Beverley; M. Billing, jun., Gravelly Hill; Miss J. A. Aykroyd, Bradford; H. Adams, Beverley.

GAME COCKEREL (Any variety).—First, G. W. Bians, Darlington. Second, M. Billing, jun., Gravelly Hill. Highly Commended, G. Jackson, Gainford; I. Wright, Ovenden, Halifax; C. Pease, Southend; D. Parsons, Cuerdon; A. Perkins, Darlington.

BANTAMS (Any variety).—First and Cup, C. Ankland, Chesterfield. Second, W. Lawrenson, Allistree, Derby. Extra, R. M. Stark, Hull. Highly Commended, J. W. Morris, Roehdale; R. Swift, Southwell; J. Crossland, jun., Wakefield.

DUCKS (Aylesbury).—First, Mrs. M. Seamons, Aylesbury. Second, J. Smith, Breder Hill, Grantham. Commended, Rev. J. G. Milner, Bellerby. **Ducklings**.—First, Mrs. M. Seamons. Second, R. M. Stark, Hull. Highly Commended, Mrs. M. Seamons. Commended, Hon. J. M. O. Fowlett, Bolton Hall.

DUCKS (Bouen).—First, M. Redhead, Strickland Gate, Kendal. Second, C. Pease, Southend. Highly Commended, J. Dixon, Bradford. **Ducklings**.—First, J. R. Rodbard, Wroughton. Second, C. Pease. Highly Commended, C. Pease.

DUCKS (Any other variety).—First, D. Parsons, Cuerdon (Grey Call). Second, J. R. Jessop, Hull (Buenos Ayren). Highly Commended, S. Burn, Whitby (Buenos Ayren).

GAUSE.—First, Mrs. F. Blair, Balthayock, Inchmartina. Second, Mrs. M. Seamons, Aylesbury. Highly Commended, Mrs. M. Seamons; C. Pease, Southend; T. Jolly, Waraby; Mrs. F. Blair. **Geelings**.—First, Mrs. A. Wooler, Yarm. Second, J. Dixon, Bradford.

TURKEYS.—First, J. Smith, Breder Hill. Second, Mrs. F. Blair, Balthayock. Highly Commended, Mrs. A. Guy, Eaton, Grantham. Commended, C. Pease, Southend. **Poultis**.—First, J. Smith. Second, C. Pease. Highly Commended, Mrs. Bolland, Bedale; Mrs. A. Guy.

SINGLE TURKEY COCK.—First, C. Pease, Southend. Second, Mrs. A. Guy, Eaton. Highly Commended, Mrs. F. Blair, Balthayock.

ANY OTHER DISTINCT BREED.—First and Second, Mrs. F. Blair (La Flèche and Crève Cœur). Highly Commended, W. W. Nicholls, Sale, near Manchester (Black Hamburg); J. Dixon, Bradford (Japanese Bantams); H. Beldon, Gilestead (Black Hamburg).

SELLING CLASS.—First, E. Whitwell, Darlington (Grey Dorkings). Second, J. Dixon, Bradford (Golden Poland). Highly Commended, E. Whitwell (Grey Dorkings); J. White (Grey Dorkings). Commended, W. L. Mason, Chesterfield (Grey Game Bantams); J. Dixon (Black Poland); J. White, Waraby (Silver Grey Dorkings and Grey Dorkings).

EXTRA STOCK.—Highly Commended, C. Pease, Southend (Golden Pheasants). Commended, C. Pease (Swans).

The Judges of poultry were George Andrews, Esq., of Dorchester, and Edward Hewitt, Esq., of Sparkbrook, Birmingham.

THE LEEDS POULTRY EXHIBITION.

THIS Society has now been established for four years, in connection with an Agricultural Show for fat cattle. Each year, we are happy to say, its success has proved regularly

progressive, but certainly its progress this year has been still more apparent than ever. The Show took place in a temporary erection, as heretofore, but it now appears to be likely before another season a contemplated permanent and suitable building will offer still greater advantages to this Society.

Of the *Grey Dorkings*, with the exception of the winning pens, we can say but little, as the condition in which the generality of the birds in this class were shown was inferior, but Mr. Benson's first and second prize birds would have been a very creditable addition to any poultry exhibition; they were the same in colour as Captain Hornby's well-known strain. The like observation holds good also with the *Black Spanish* fowls—viz., condition was wanting throughout. In *Cochins*, all colours competing together, Partridge-feathered ones exhibited by Elijah Smith, of Manchester, took the precedence. So good was this pen, that the well-known Captain Heaton's stock had to take second place, and this Partridge pen were the only birds that competed closely with the trio of *Black Poland*, to which the Society's Silver Cup for the best pen of Any variety of poultry exhibited was awarded. Captain Heaton's *Buffs* were well shown, but appeared to suffer from being too frequently exhibited. In the *Game* fowls, *Black* or *Brown Reds*, there was considerable competition, the *Brown Reds* being as a whole the most perfect variety. A splendid *Brown Red* pen took first position. In this class as good a pen of the same colour as any one could wish to see, and decidedly not inferior in character to even the winners, was compulsorily disqualified by the arbitrators, one of the hens being suffering severely from "roup." The cock in this pen was naturally a very perfect one, but by some accident or other had lost a spur. Class 37 was for Any variety of Game except *Reds*, and the result was an exhibition of many pens of the best *Duckwings* we have seen for years past; in fact, as close-feathered well-built birds as ever even a "cocker" could desire. This perfection of feather is but seldom attained by this breed of Game fowls. In the *Single Game Cock* class, a noble *Black Red* headed the prize list, the third prize was also of this colour, the second prize being given to a *Brown Red*. It is well known to connoisseurs of poultry that the neighbourhood of Leeds has for a long term of years been famous for its *Hamburgs*, and certainly the collection now sent fully maintained its high repute. The *Spangled* varieties were, perhaps, equal to any classes that have been shown at any poultry show this year. Not only were the winning pens of the highest merit, but it would have been difficult to point out even a single indifferent pen in the whole of the classes. The great feature of the Leeds Show, however, strangely enough, proved to be the *Poland* class; and it was the unanimous opinion of the Judges that so good a number and variety of *Polands* in any one show they never before met with. It was the first-prize birds in this class (*Black Poland*s with white crests), that secured the Society's silver cup for the best pen of poultry shown. The class for "Any variety or cross" was almost exclusively made up of *Black Hamburgs*, as no less than twelve pens of this useful breed put in an appearance. Nearly every pen was good. The *Black Bantams* were not equal to our expectations. In the *White Bantams* the competition was better; in this class a somewhat singular and laughable incident occurred, as decidedly the best pen was disqualified for an attempted imposition, that shows at least the ingenuity of poultry amateurs in the northern counties. The exhibitor, finding his birds the worse for moulting, actually attempted to supply nature's temporary deficiency by refixing, very artistically too, the tail-feathers with cobbler's wax! To the practical eye of one of the Judges, Mr. Hewitt, of Birmingham, this cunning device was instantly apparent, and a close inspection, when the fowls at his desire were taken out of the pen, removed all doubts on the subject. Having again and again proved that simply the disqualification of a pen for such unjust practices does but little, if anything, to prevent their owners from again attempting the like frauds on honest competition, it appears most probable an exposure of names as well as trickster habits, may do better to remedy the evil in future than the mere loss of a prize only, and, therefore, we publish the name of the exhibitor—Mr. Frederick Hardy, of Quarry Gap, Bradford. The *Game Bantams* were not nearly so good as we hoped for; and singularly enough, the

best Game Bantams in the Show consisted of several pens entered in the wrong class.

The *Geese*, *Turkeys*, and *Ducks* were decidedly good—in fact, not a single variety was unrepresented, and that, too, by the best of birds.

The *Pigeons* at Leeds were a very interesting and excellent portion of the Exhibition. We particularly noticed some especially good White Pouters, Duns, Carriers (which, by-the-by, were quickly snapped up at not a half of their value directly the Show opened), and many varieties of beautiful Tumblers, though, strange to say, the Almonds were not good. The White Owls were perfect gems; and the Black, as also the White, Trumpeters were scarcely less worthy of notice. The prize Fantails were particularly good, but shown in the dirtiest feather we ever yet saw Pigeons. The Turbits were of many colours, and proved a capital class. The Jacobins were also superior. The class for "Any other variety of Pigeons" was so well filled as to induce the Judges to award an extra equal first prize.

Among the oddities of the Show, in the class for any other variety of poultry a pair of the common Barn Owls were shown. The novelty of their appearance interested the visitors, but the poor Owls evidently considered themselves in the wrong class, as much so as did the Arbitrators who officiated.

The weather, though windy in the extreme, was fine, and, consequently, there was not any lack of visitors.

The Club gave a Silver Cup for the best pen of poultry in the Show ground, in addition to the money prizes.

DORKINGS.—First and Second, F. Benson, Aldborough, Boroughbridge. Third, S. Pickard, Wakefield. Commended, G. Taylor, Hunslet.

SPANISH.—First, D. Illingworth, Burley, Otley. Second, T. Greenwood, Dewsbury. Third, J. Siddal, Halifax.

COCHIN-CHINA.—First and Third, E. Smith, Middleton. Second, Captain Heaton, Lower Broughton. Commended, Captain Heaton; F. M. Hindle, Haslingden; T. Wrigley, Tongue, Middleton.

GAME (Black-breasted and other Reds).—First, H. Adams, Beverley. Second, E. Beldon, Bingley. Third, W. Boyes, Beverley.

GAME (Any other variety).—First, H. Adams, Beverley. Second, H. Snowden, Bradford. Third, J. Hodgson, Bradford. Commended, J. Harrison, Leeds; J. Anderson, Bingley; J. Rinder, Sheepscar; T. Hartley, Gomersal.

GAME COCK (Any variety).—First, G. Pounder, Kirby Moorside, York. Second, H. Adams, Beverley. Third, M. Billing, jun., Birmingham. Highly Commended, R. Hemmings, Shelf, Halifax; H. Adams. Commended, T. Suddick, Dudley Hill; W. Garforth, Drighlington.

HAMBURG (Gold-pencilled).—First, J. Lancashire, Chadderton, Lancashire. Second, W. Cannan, Bradford. Third, R. Hemmings, Halifax. Highly Commended, J. Dixon, Bradford. Commended, T. Wrigley, jun., Middleton.

HAMBURG (Silver-pencilled).—First, J. Dixon, Bradford. Second, H. Pickles, jun., Earby, Skipton. Third, R. Hemmings, Halifax. Commended, E. Beldon, Bingley; J. Platt, Bolton, Lancashire.

HAMBURG (Gold-spangled).—First, J. Newton, Silsden. Second, T. Birdsall, Woodhouse Carr. Third, J. Hope, Wernath, Oldham. Highly Commended, J. H. Hepper, Upper Wortley. Commended, J. Dixon, Bradford; J. H. Hepper; W. Cannan, Bradford.

HAMBURG (Silver-spangled).—First, J. Lancashire, Chadderton. Second, J. Newton, Silsden. Third, E. Stephenson, Bowler, Middleton. Commended, J. Dixon, Bradford; J. Jowett, Morley, Leeds; E. Beldon, Bingley.

POLANDS (Any variety).—The Society's Silver Cup, value six guineas, for best pen of poultry of any breed exhibited and First, H. Carter, Upperton, Holmfirth. Second, W. Newsome, Bingley. Third, J. Dixon, Bradford. Highly Commended, J. Dixon; W. Newsome. Commended, D. Illingworth, Burley, Otley.

ANY VARIETY NOT PREVIOUSLY CLASSED.—First, J. Hope, Oldham (Black Hamburgs). Second, E. Beldon, Bingley (Ptarmigans). Third, E. Leech, Rochdale (Brahma Footsies). Highly Commended, J. Hind, Bingley (Black Hamburgs). Commended, W. Harker, Cottingley, Bingley (Black Hamburgs).

BANTAMS (Black).—First, E. Beldon, Bingley. Second, H. Gornal, Farnley.

BANTAMS (White).—First, J. Harrison, Wakefield. Second, A. & B. Farrar, Bramley.

BANTAMS (Game).—First, R. Smith, Hull. Second, C. Templar, Ackworth. Commended, T. Carr, Bentham; H. & G. Newton, Garforth.

BANTAMS (Any variety).—First, W. J. Cope, Barnsley (Pekin Bantams). Second, R. M. Stark, Hull (Gold-laced Bantams).

GUINNA FOWL.—First, O. A. Young, Driffield. Second, Lady Hawke, Pontefract. Third, J. Dixon, Bradford.

TURKEYS.—First, R. M. Stark, Hull. Second, J. Dixon, Bradford. Third, Richardson, Barnsley.

JERSEY.—First, Mrs. Appleyard, Thorp Arch. Second, O. A. Young, Driffield. Third, J. Dixon, Bradford. Commended, G. Yates, Bradford.

DUCKS (Aylesbury).—First, T. E. Kell, Wetherby. Second, E. Leech, Rochdale. Third, F. M. Hindle, Haslingden. Highly Commended, F. M. Hindle; E. Leech.

DUCKS (Rouen).—First, J. Dixon, Bradford. Second, E. Leech, Rochdale. Third, J. Ward, Drighlington.

DUCKS (Any variety).—First, J. R. Jessop, Hull (East India Ducks). Second, R. M. Stark, Hull (Wild Ducks). Third, J. Dixon, Bradford.

EXTRA POULTRY.—First, J. Dixon, Bradford (Mandarin Ducks). Second, E. Leech, Rochdale (Malays). Third, F. Hindle, Haslingden (Chinese Ducks).

PIGEONS.

CARRIERS.—First, W. Watson, Beverley. Second, J. Firth, Dewsbury. **POUTERS.**—First, E. Horner, Harewood. Second, F. A. & W. J. Stead, Leeds.

TUMBLERS (Almond).—Second, H. Yardley, Birmingham. First withheld. **TUMBLERS** (Any variety).—First, J. R. Jessop, Hull. Second, C. Hodgkinson, Burley, Otley. Highly Commended, F. Elze, Bayswater; R. Yardley, Birmingham; A. Wilkinson, New Leeds. Commended, T. Birdsall, Woodhouse Carr; F. A. & W. J. Stead, Leeds; A. Wilkinson.

OWLS.—First, H. Yardley, Birmingham. Second, F. Elze, Bayswater. Highly Commended, F. A. & W. J. Stead, Leeds.

FANTAILS.—First, F. Elze, Bayswater. Second, F. A. & W. J. Stead, Leeds. Commended, T. Birdsall, Woodhouse Carr.

BARBS.—First, H. Yardley, Birmingham. Second, J. D. Denby, Leeds. Commended, J. R. Jessop, Hull.

TURBITS.—First, J. W. Edge, Birmingham. Second, H. Yardley, Birmingham. Highly Commended, T. A. & W. J. Stead, Leeds; F. Elze, Bayswater.

JACOBINS.—First and Second, T. Ellington, Woodmansay, Beverley. Highly Commended, T. Birdsall, Woodhouse Carr.

TAUPETERS.—First, F. Key, Beverley. Second, S. Robson, Brotherton.

NUSS.—First, F. Key, Beverley. Second, F. Elze, Bayswater. Highly Commended, J. W. Edge, Birmingham.

ANY OTHER VARIETY.—Equal First, H. Yardley, Birmingham. Second, J. W. Edge, Birmingham. Highly Commended, J. Pollard, Leeds; J. Wade, Bank, Leeds. Commended, T. Birdsall, Woodhouse Carr.

The Judges officiating at Leeds were—Mr. Edward Bond, of Leeds; Mr. Thomas Challoner, of Whitwell, Chesterfield; and Mr. Edward Hewitt, of Sparkbrook, Birmingham.

YORKSHIRE FAT STOCK AND POULTRY SOCIETY.

THE seventh annual Exhibition of the above Society was held at York on the 2nd, 3rd, and 4th inst., and went off very satisfactorily. There was a large increase in the poultry over those shown in former years; and it promises now to become one of the principal poultry shows in England.

The following is the list of prizes awarded:—

DORKING (Any colour).—First and Second, F. Benson, Aldborough. Third, J. White, Warley. Highly Commended, R. M. Stark, Hull. Commended, R. Gell, Grimston.

SPANISH.—First, G. Jackson, Penley Grove Street, York. Second, J. Dixon, Bradford. Third, C. Powell, Knaresborough. Highly Commended, G. F. Jones, Bootham, York.

COCHIN-CHINA (Cinnamon or Buff).—First, T. H. Barker, Hovingham. Second, H. W. B. Berwick, Helmsley.

COCHIN-CHINA (Any other variety).—First and Second, J. Bell, Thirsk.

GAME (Black-breasted or other Reds).—First, Miss E. Beldon, Gilstead, Bingley. Second, J. Firth, Halifax. Third, T. Dyson, Pelton Lane, Halifax. (All the class commended).

GAME (Any other variety).—First, T. Hartley, Field Head, Gomersal, Leeds. Second, J. Firth, Lily Lane Mills, Halifax. Third, H. Whitley, Womersley, Pontefract. Highly Commended, J. Rinder, Sheepscar, Leeds. Commended, Miss A. Hodgson, Illingworth, Halifax.

HAMBURG (Golden-pencilled).—First, Miss E. Beldon, Gilstead, Bingley. Second, J. Dixon, Bradford. (All the class commended).

HAMBURG (Silver-pencilled).—First, J. Dixon, Bradford. Second, D. Illingworth, Burley, Otley. (All commended).

HAMBURG (Golden-spangled).—First, T. and J. Dobson, Pickering. Second, W. Cannan, Adolphus Works, Bradford. (All the class commended).

HAMBURG (Silver-spangled).—First, Miss E. Beldon, Gilstead, Bingley. Second, W. Cannan, Adolphus Works, Bradford. (All the class commended).

POLAND (Any variety).—First, Miss E. Beldon, Gilstead, Bingley. Second, R. M. Stark, Claremont Terrace, Hull. Highly Commended, J. Dixon, Bradford.

ANY FARMYARD CROSS, OR OTHER VARIETY NOT PREVIOUSLY CLASSED.—First, F. E. Powell, Knaresborough. Second, W. Cannan, Adolphus Works, Bradford. Third, J. Carey, Haslington, York. (All the class commended).

GUINNA FOWL.—Prize, Lady Hawke, Womersley Park, Pontefract.

BANTAMS.—First, J. Braddock, York. Second, H. & G. Newton.

BANTAMS (Black or White).—First, W. Cannan, Bradford. Second, W. Baynes, Middleton, Pickering.

BANTAMS (Any other variety).—First, Miss E. Beldon, Gilstead, Bingley. Second, J. Dixon, Bradford.

TURKEYS.—First, Mrs. A. Guy, Eaton, Grantham. Second, R. M. Stark, Hull. Highly Commended, J. Dixon, Bradford.

GESE.—First, O. S. Young, Driffield. Second, C. Pears, Southam, Darlington. Highly Commended, J. Dixon, Bradford.

DUCKS (Aylesbury).—First, T. E. Kell, Wetherby. Second, R. M. Stark, Hull. Highly Commended, O. S. Young, Driffield. (All the class commended).

DUCKS (Rouen, or any other variety).—First, J. Dixon, Bradford. Second, Miss E. Beldon, Gilstead, Bingley. (All the class commended).

JUDGES.—Messrs. J. O. Jolly, Acomb, York; M. Hunter, Green Hammerton, York; G. Jackson, Penley Grove Street, York; and Alexander Catley, Tower Street, York.

THE CHIPPENHAM POULTRY SHOW.

THE town of Chippenham, Wilts, possesses many advantages as a place for the exhibition of poultry, for the Great Western Railway passes through it, connecting it

with a very large portion of the whole of England; then for some years past, a railway has been opened to Salisbury, and by it the extreme south has been joined to Chippenham; and only the other day a railway from Calne commenced running into the Chippenham Station. As another advantage let me add, that the station is very large, and, however many pens of poultry might arrive, at any rate there would be abundance of room for them all. Then, too, the place for exhibition is not very far from the station; and as I heard an exhibitor remark, "Mr. H. Gale, who has the care of the poultry, is among the most civil and careful of men." Yet, strange to say, that with all these things in its favour, the Show at Chippenham (which is a very stirring striving town, by no means "a grass-grown place of the ancients"), is as yet among the smaller shows, perhaps this arises from its not being advertised. For some years past poultry has been regularly exhibited at the annual meeting of the Agricultural Association, held in the spacious covered cheesemarket, behind the new hall.

About the origin of this Show there is a little tale to tell. A gentleman in advance of his neighbours in poultry matters, suggested at a meeting of the Agricultural Society that prizes should be awarded for good specimens of the domesticated fowls. "What!" said another gentleman, "would you give a prize for a goose hiss-hiss?" This was uttered in perfect good humour, though with a feeling of real surprise. But the gentleman stood his ground and said manfully, "Yes, for a good goose, certainly." Hence arose the Chippenham Poultry Show. "All honour to those who try."

This year there were ninety-nine pens in all. Those of the fowls were arranged in the Market House; those of the Turkeys, Geese, and Ducks, at the sides of the wide space at its entrance, in which, by the way, there would be abundance of room for a middle row should the Show become larger.

As usual at Chippenham, the Game was the predominant class, there being twenty-two pens and seven single cocks. I was glad to see this truly English breed, and by far the most beautiful of all fowls, in such high favour. Formerly, when cock-fighting was customary, it was impossible to sever the idea of cruelty from the sight of a Game cock; now, happily, our admiration has no such drawback. Almost all the pens contained good birds, so that this prize was the blue ribbon of the Show. The first prize was obtained by Mr. H. Waller, of Calne; the second went to a Chippenham breeder, Mr. H. Stevenson. Mr. A. Heath's prize bird among the single cocks was almost perfection, so neat, so close-feathered, and in head so snake-like. The *Dorkings* mustered strongly; but I was sorry to see only two pens of *Spanish*, two of *Golden-pencilled Hamburgs*, and two of *Silver-pencilled*; and worse still, no entry whatsoever of *Silver-spangled*. Let me recommend these classes to fowl-lovers in and near Chippenham. Why should not some one at least adopt as his fancy those striking-looking birds, and excellent layers into the bargain, the *Silver-spangled Hamburgs*? he would have a great chance of success, and gratify the eyes of the many visitors at the Show. Mr. Jacob Phillips showed a good pen of *Polands*; there being four pens in this class it was represented better than we had hoped, as *Polands* seem at most shows on the decline. Among the *Cochins*, Miss J. Milward took first prize; and among "Any other distinct or cross breed" Dr. Colborne, of Chippenham, exhibited a pair of *Crève Cœur*s, a new sort at Chippenham, the cock a very "Diabolus" in appearance but not in disposition, as his owner tells me. Near *Diabolus* was a brother fiend, in looks at least, Mr. J. J. Fox's *Malay Cock*, but still all praise to Mr. Fox for keeping up an old and once highly esteemed breed. The *Malay Cock* might aptly possess the soul which once inhabited the body of a *Romish Inquisitor*. "Gratify me, please, with another sight of the rack!" seems to say Mr. Malay. And, now, for the pretty pretty *Bantams*, which mustered stronger than ever before—there were ten pens. Doubtless Mr. R. Brotherhood's great success with his now famous *Blacks*, which began their career of conquest at Chippenham, has acted as an incentive to his neighbours. The prize *Black Reds*, Mr. F. Bailey's, of Calne, were good; while Mr. F. Phillips' *Duckwings* were as to the hens very excellent, but the cock was scarcely their equal. As to the *Turkeys*, *Geese*, and *Ducks*, the first were good, the second very good,

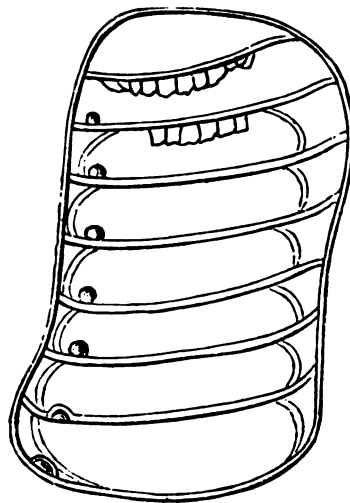
the last not so very good; the *Blacks* (Miss Milward's) and the *Rouens* being better than the *Aylesburys*.

As I walked round and round enjoying the sight of the beautiful birds, thus brought so pleasantly before me—for a poultry show must be allowed on all hands to be a pretty sight—I could not but wish that prizes were offered at Chippenham for Pigeons; they are always attractive, and ladies especially gather round their pens. At one show I could not get my fill of enjoyment out of the Pigeons, for alas! crinoline barred my vision. Indeed, I would venture to prophesy, that commercially the Association would be no loser by offering fair prizes for these beautiful birds, as they would be sure to "draw." Let me just add, in conclusion, that I had the pleasure at this Show of making Mr. Rodbard's acquaintance, who, after the prizes had been awarded (please to mark the after, good exhibitors), most kindly walked round with me, and we discussed the merits of various pens, and as poultry-lovers are wont to be, we were friendly at once. WILTSHIRE RECTOR.

WASPS AS PAPER-MAKERS—MALES OF INSECTS HAVE NO STINGS.

I AM indebted for the following very interesting particulars regarding wasps to my friend Mr. F. Smith, President of the Entomological Society. It is completely decisive on the question recently mooted in THE JOURNAL OF HORTICULTURE with regard to the non-possession of stings by male wasps.—A DEVONSHIRE BEE-KEEPER.

"I think I see in the cells of bees a mode of construction quite different to that of the wasps, and should expect to do



so when we consider the fact that bees use a material soft and ductile at all times; wasps very different materials in different genera. All are paper-makers, but some manufacture tissue, others I must call note-paper-makers, then we have brown-paper-makers, and we have pasteboard-makers; the latter construct bell-shaped nests that often swing on the branch bell-wise. These wasps complete the bell and also the floors, upon which they subsequently build cells, before a single cell is formed, as above, or, probably, in most cases when four or five floors are laid down, they begin at the top to erect a few cells while the lower chambers are being finished.

"No male wasp has a sting, neither has the male of any known species of insect."

FOUL BROOD.

I MUST fling my experience into the scale of those who think and assert that foul brood is a disease, and not peculiar to the Ligurian race of bees. Without doubt I had it in one of my hives this year, and I entertain as little the disease once was the cause of destroying a hive of n.

in Yorkshire. My diseased hive of this year was not experimented upon. I do not see how its brood could have become chilled. The bees were in a small hive of thick wood, placed in a bee-house well protected with asphalt, and packed round in the interior with hay not removed till the swarming season. My bees are all of the English sort. I say, therefore, to "INQUIRER," and others, that I range on the side with those who imagine that a foul disease exists and rages at times amongst our favourites, and that our thanks are due to those who have opened our eyes to its existence. There can be no question either, but that most of the pollen lately gathered has been from the ivy. Such a profusion of bloom on that "rare old plant, the ivy green," as exists this year, has never before been remarked upon by—A HAMPSHIRE BEE-KEEPER.

If Mr. Lowe in his late escapade awkwardly trod upon sensitive corns, I am sure, from the kicks received on every side by himself, he has fully atoned for the tone of his articles. I cannot believe that Mr. Lowe meant to offend; and no one from his remarks, which were more empiric than logical, and more facetious than hurtful, will think one whit less highly of Mr. Woodbury and his scientific apiary. But when truth is to be investigated, statements must be met by counter-statements supported by evidence.

And now that Mr. Lowe has amused us with a fling at experimentalists, I should like him to measure his strength with Mr. Woodbury in facts and arguments on the "foul brood" affection, which has a very disagreeable odour to all lovers of bees, and carries along with it a most irritating virus.

Mr. Lowe has a good case, let him apply himself to it; a vast mass of evidence may be adduced in support of his views.

On a less important subject than "foul brood," I would not object to a little kind abuse; but where extermination is threatened, by all means let our energies be applied to the cause, extent, and cure of the evil.—A LOOKER-ON.

HOW TO REMEDY CROOKED COMBS IN A FRAME-HIVE.

Will the "DEVONSHIRE BEE-KEEPER," or any of your correspondents inform me which is the best way to secure straight combs in Woodbury-bar frame-hives, when guide-combs are not obtainable? I have run melted wax along my ribbed bars, and I thought this would cause the bees to build straight combs, but to my great disappointment the bees have built crooked combs, as though there had been no bars, which makes it difficult to extract the bars from the hive.—S. H.

[You have already adopted the best means of insuring the formation of straight combs when guide-combs are not obtainable—means that would probably be successful in nine cases out of ten. As, however, they appear to have failed in the present instance, you had better leave matters as they are till next year. During the middle of a fine day in April the bees should be driven into an empty hive, when such combs as require it may be cut out, straightened, and arranged symmetrically in the frames and replaced in the hive, to which the bees should then be returned. Full directions for performing this operation were given in No. 75 of THE JOURNAL OF HORTICULTURE.—A DEVONSHIRE BEE-KEEPER.]

OUR LETTER BOX.

BOARDED FLOORS FOR POULTRY-HOUSES (M. R. P.).—They are objectionable, because all hard flooring upon which fowls have to descend from the perches is liable to cause corns and other injuries to their feet. Our charge for advertisements is 6d. per line.

VULTURE HOCKS (An Inquirer).—Vulture-hocked fowls have feathers projecting from below the knee-joint, and sticking out behind, as the vulture and some other birds of prey. It is considered a fault in Brahma vultres when much developed. In many good specimens it exists in a slight degree and is not then much noticed.

SLY CHICKENS (Excellior).—If you intend your fowls for the London market, you must confine yourself to the Dorking, and must have your chickens ready for sale from the middle of April till the middle of June, or the beginning of July. They should be from eighteen to twenty weeks old, and provided they are not older, the larger they are the better. Cocks will not do, because they have yellow legs, nor will any do that have black, blue, or green legs. They should be fatted, killed and picked clean.

COLOUR OF ROUSE DUCK'S BILL (A Constant Reader).—The Rouse Duck's bill should be the fac-simile of the wild Duck's. It should be yellow at the tip and round the edges, brown in the centre—in colour, but not in shape, like the Bean Goose, and it is said that bird gained its name from the bill being coloured like a horse bean.

BIRCHEN GREY GAME FOWLS (Doubtator).—When Judges look at Birchen Greys they do not ask themselves how they are bred. They are birds of colour, and unless correct they are passed over. We have seldom seen more than two or three pens of such at Birmingham, and the competition is too hard for them. The Birchen Grey may be bred between the Black Red and the Silver Duckwing.

DORKING'S FEATHERS CHANGED IN COLOUR (A. N. B.).—Fowls will quit in moulting. We have had Spanish moult partly white, and re-moult black. There is no reason why your Dorking hen should not do the same. When a fowl is becoming white from age there is no hope of any return to dark plumage; but at any other period it may be looked for.

BANTAMS WITH DORKINGS (Idem).—We keep Bantams with large breeds without any difficulty. We believe you may do the same, but not with the smaller, as Game, Hamburgs, &c.

PULLETS (G. Whittington).—They are probably of no value. Put them up for sale at one of Mr. Stevens's auctions, and then you will ascertain what fanciers think of them.

WHITE-BOOTED BANTAMS (F. H. P.).—They may be double or single-combed. The former are preferred always. They should not be vulture-hocked. The latter appendage belongs to what are called Booted Bantams. They are feathered to the toes and very vulture-hocked.

SCOTCH BAKIES (J. W.).—The "Poultry Book" is to be had at our office. Bakies are now very scarce. The best we have seen or know of, belong to the Hon. Georgina de Flahault, Tullyallen, Kincardine-on-Forth. That lady may have some to spare. They are good layers, and excellent sitters and mothers.

BLACK BANTAMS.—An Oxfordshire Rector presents his compliments to "A WILTSHIRE RECTOR," and thanks him for his letter. He would not like to make such a proposal to the Editors as that referred to, as in carrying out the arrangement an unwarranted confidence might be imposed.

PEN OF GAME FOWLS (W. J.).—Two pullets must match in every particular. A Black-breasted Red cock must not have one red feather in the breast.

DORKING FEATHERLESS UNDER THE BRAK (W. J. P.).—Rub the bare place with compound sulphur ointment. We do not think it comes from insects. If it does, and the bird has not access to dust, provide him with it. It will kill vermin.

DUCKS AND GEES AT BIRMINGHAM (Quack).—We do not know who judged the Ducks at Birmingham. We thought them a very fine class, and well judged. The Rouen according to our idea, should be in colour the counterpart of wild Ducks. At this season of the year it is easy to get wild Ducks and compare them. We believe the prizes are given for Grey and Mottled, and in these pens the gander is almost always white. Weight is an essential point in Geese, and but a few years ago any approach to white was held superior to grey. The introduction of the Toulouse has altered this, but in any market where Geese are sold for the table, a Grey is less valuable than a White or Pied bird. Geese are table, not feather birds. High condition is impressed on the Judges as desirable, and so far as we could judge, the first-prize pen enjoyed it.

BLACK HAMBURGERS AND DUCKS AT BIRMINGHAM (A Subscriber).—We saw the classes in question, and were perfectly satisfied with them. It is very possible that sometimes Ducks are mixed with ducklings, and old fowls with chickens. Subscriber would himself be deceived sometimes.

NORFOLK ORNITHOLOGICAL SOCIETY.—I should feel greatly obliged if you would correct an error which appears in your Number of November (Class viz., in the undermentioned awards:—Canaries, 4s.—Norwich (Clear Yellow).—First and Second. Norwich (Clear Buff).—First. Norwich (Marked and Variegated Yellows).—First. Goldfinch (Males, Males).—First. Goldfinch (Jonque).—First and Second. British Birds.—Sky-lark and Goldfinch, Siskin or Aberdevine. Foreign Birds.—Wax Bill. Poultry (Class 123).—Game Bantams (Duckwings).—Second. All these are placed to the credit of Mr. S. Waters, of Ipswich, instead of myself.—W. WALSH, Hyde Street, Winchester.

PARROT AND DOG (An Old Subscriber).—With reference to the Australian Parrot we fear not much can be done except keeping it warm, and most probably it will regain its feathers. The dog should be kept short of food in order to reduce its fat. Instead of meat give it bread and milk, and a little broth in turn, and occasionally a teaspoonful of castor oil.

WANTS OF AMATEURS (Egomet).—We have read your communication, and communications from others, upon the subject of setting apart a column for amateurs to make known their wants to each other, but find there are insuperable difficulties. Our advertising columns must be open to all without any attempt at distinction; and no amount of remuneration would induce us to sanction the belief that all who were included in an amateur's column were trustworthy. An advertisement is the legitimate mode of making known the requirements of either the buyer or the seller, and neither the one nor the other need be victimised if common caution be adopted. As suggested in our columns to-day, a third party might hold the money until inspection had been obtained and the negotiation was concluded.

REOMET.—We have no objection to insert your communication, but the time has come when it is desirable for us to have your real name and address.

LONDON MARKETS.—DECEMBER 14.

POULTRY.

There is a slight improvement in the market. The supply, as is always the case before Christmas, is much less, and good quality finds a ready sale at better prices.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	0	3	6	Partridges	2	0	2	3
Smaller do.	2	6	3	0	Grouse	2	0	2	6
Chickens	1	9	2	0	Hares	2	0	2	6
Geese	6	0	6	6	Rabbits	1	4	1	5
Ducks	2	0	2	2	Wild do.	0	3	0	9
Phoebants	7	2	2	2	Pigeons	0	3	0	9

WEEKLY CALENDAR.

Day of M th Week.	Day of Week.	DECEMBER 22—28, 1863.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
22	Tu	Sun's declin. 23° 27' S.	45.0	38.0	38.0	17	m. 8.	m. 8.	m. 1.	m. 5	17	m. 17	356
23	W	Sir J. Sinclair died, 1838.	44.1	31.9	38.0	19	7 8	53 3	56 2	20 6	18	0 47	357
24	Th	Black Duck comes.	48.9	31.1	37.5	15	7 8	52 3	47 3	12 7	14	0 17	358
25	F	CHRISTMAS DAY.	43.2	28.5	35.9	9	8 8	53 3	44 4	83 2	0	bef. 13	359
26	S	ST. STEPHEN.	42.5	31.3	36.9	12	8 8	53 3	46 5	33 8	16	0 48	360
27	Sun	1 SUN. APT. CHRISTMAS. ST. JOHN	42.4	29.4	35.9	14	8 8	54 3	49 6	4 9	17	1 13	361
28	M	INNOCENTS. [THE EVANGELIST.	41.6	28.1	34.8	11	8 8	55 3	53 7	29 9	18	1 42	362

From observations taken near London during the last thirty-six years, the average day temperature of the week is 43.2°, and its night temperature 30.5°. The greatest heat was 58°, on the 25th, 1827, and 23th, 1855; and the lowest cold, 1° below zero, on the 28th, 1860. The greatest fall of rain was 1.13 inch.

MATERIALS USED IN FORMING COMPOSTS.



SINCE the time that man was ordained to earn his bread by the sweat of his brow, many and varied have been the means adopted to lighten the labour, and to increase the capabilities of certain portions of the earth's surface to bring forth trees, herbs, or fruits in greater abundance than by her own unassisted power

she would have been able to do. The tilling of the ground in the first place, to render it a fit repository for the seeds of the plants mostly wanted, no doubt led to the addition of such decayed substances as were supposed to be in the way, and these, being buried to get rid of them, gave evidence by the improved character of the crops that the addition was to their liking, and, probably, more care would be taken next time to distribute the refuse matter more regularly over the ground. Such a beginning is very likely to have been the first application of manure, and it is not unlikely that examples of it may yet be met with in countries but recently, or even only now, commencing that course of cultivation which it is said all are destined to go through.

Assuming this primitive mode of burying the decayed substances collected about the homestead to have been the commencement of that system of manuring which has of late years engaged the attention of the most learned men of the age, it certainly stands forth in strong contrast with what is said to have been the custom with some American farmers, who, having allowed their dung-heaps to accumulate before their doors to such an inconvenient extent as to be no longer endurable, preferred as a remedy building new sheds and dwellings at other places rather than to remove the dung. Whether this was so or not, there is little doubt but that much greater waste of manurial substances takes place in countries but thinly inhabited than in those in which land and its produce are of great value. The manuring of some lands is, however, in some countries undertaken by Nature herself, and the labour of the husbandman is of a monotonous character, differing but little one century after another. Of this class is the flat but rich corn-producing country of Egypt, which is more indebted for its fertility to the river Nile than to any of the numerous races of people which have inhabited it for the last twenty centuries or more.

Modes of cultivation, however, requiring more industry on the part of the husbandman have been continued for very long periods in certain densely populated districts that have for many centuries possessed a great amount of civilisation—as, for instance, the valley of the Ganges and other Indian rivers, where a certain amount of manual

labour is most liberally met by natural assistance, which a long course of years has proved may invariably be depended on. But in this case it sometimes happens that the artificial process adopted bears a strong resemblance to manuring. Irrigating the Rice fields with water which has been stored away for that purpose is only another form of using the materials which Providence has placed within our reach; and the supply being abundant, the skill to collect and use it was only wanting, Nature having been prodigal in other of her blessings as well.

A much greater amount of industry is wanted in countries less favourably placed by Nature; but fortunately the inhabitants of such countries have generally been found equal to the requirements of this case. Inhabiting a climate less favourable to vegetation, they have to use more exertion to extract from mother earth those productions they so much want; and with the sweat of the brow the mind is brought to bear on the subject, and new and improved modes of cultivation are brought into exercise, or it may be that a long series of experiments on the part of those who have passed away may have established a set of rules for the guidance of their successors, and from which it is not safe to depart. To the latter cause much of the cultivation of China may, doubtless, be traced; and that empire, though no longer progressive according to the opinions of those who have lately visited it, must at some former time have been so. or the high state of cultivation it has arrived at would never have existed. Perhaps the most remarkable feature in the cultivation of the land by that singular people, the Chinese, is the careful and judicious mode in which they collect and use everything in the shape of manure; and as we have reason to believe that many of the lands now in cultivation have been so for many, many generations, the theory of wearing-out put forth by some has assuredly an antidote which the Chinese have been far-seeing enough to take hold of. Other countries afford examples in like manner of long-continued cultivation being still attended with a useful result, when prudence and industry direct the operations of the cultivator. But a reverse state of things is common in many countries that once by their civilisation and standing held a proud place in the history of the world. The hilly region of the Holy Land is, unquestionably, less fruitful now than it was three thousand years ago; and it is likely some of the fairest provinces of Italy are in like manner deteriorated by a long course of mismanagement. Other instances might be given; but enough has been said to prove that, in the temperate and colder districts of the earth, a great amount of skill and industry is required to maintain that healthy fertility of the ground so necessary to the well-being of the crops required for the sustenance of man. Let us now take a glance at what has been done at home to attain this object, and then notice some of the substances occasionally met with as agents in increasing that productiveness, or, in other words, what are commonly called fertilisers.

In the above introductory matter I have pointed out the

necessity, when more than ordinary productiveness is wanted, of resorting to some means in addition to those which nature has provided; and this assistance is more necessary in a climate less favourable to vegetation than those of the tropics. However, enterprising cultivators have not been wanting, and in this country the results of numerous and carefully-performed experiments in husbandry and gardening have from time to time been placed before us. Discussions have also verified what is safe and right to follow, and certain substances have been so generally acknowledged to be favourable to the growth of particular plants as to be almost household words. Some manures, too, which have been put forward with high-sounding names have failed to produce such good results as were expected of them, and have consequently fallen into disuse, while they in turn have been succeeded by others sharing a similar fate, but not without having an occasional supporter who would state his conviction of their utility. My object, however, is not to go through the list of manurial substances that have at various times been urged on the attention of the farmer and gardener, but merely to point out some of those within the reach of the latter, which are not so extensively used as they ought to be. I may also make a few stray notes on those so strongly recommended of late years, and which have either not realised the expectations formed of them, or could not be had in sufficient abundance.

CHARCOAL.—Some twenty or more years ago no little stir was made in the gardening world, by the marvellous effects which this substance was said to have on vegetation. Charcoal in lumps or charcoal dust was reported to possess some peculiar virtue of great importance to vegetation, and a number of cases were recorded in which it was said to have been used with such success that it promised to equal in importance gas, steam, and the other improvements of the age. That its utility as a fertiliser in conjunction with other substances is very great there cannot be a question; but it gradually sunk in estimation, and eventually took its place with other things of like merit. Nevertheless, it must be admitted, that while it was at the height of its popularity, many persons seemed to look down with contemptuous disdain on the plodding dung-cart. Charcoal was said to be capable of imparting an almost marvellous vigour to many plants on which it was tried—Cucumbers, Pines, flowering plants of various kinds, and even out-door crops. Nay, so far was the charcoal mania carried, that a gentleman who had extensive plantations in the West Indies, prepared a large quantity on his estates in England, and sent it over to Demerara to dress his sugar plantations with. Of the result of this latter experiment I never heard, but the gradual decline of this article to its place with other manures, and the subsequent depreciation of West Indian property from political causes, naturally led to the abandonment of all previously concerted plans for exporting charcoal. Nevertheless, it continued to be popular with some, and its merits are acknowledged at the present day.

In potting plants of various kinds, its use in a rough state as drainage has been at all times a favourite practice and still continues to be so, and in this way few plants object to it, while a large number seem to enjoy it much. Small pieces of charcoal mixed with the soil, when plants require it to be very open, are also beneficial, and many Orchids and other plants of delicate habits seem to enjoy the open texture which a quantity of charcoal or its dust gives to the mixture they are grown in. Charcoal dust or ashes have been from time immemorial recommended for Onions; and mixed with the soil in which young Cabbage and other plants of a similar nature are sown, it is said to prevent the "clubbing" which would otherwise happen. Some other qualities it also has, but they must not be gone into here; suffice it to say that charcoal, unlike ordinary decaying manures, which impart richness to the mould they are in contact with, appears to act by absorbing liquids at such times as they are supplied, and parting with them to the roots of plants as they are wanted. Charcoal, though certainly not a barren substance, is nevertheless far from being agreeable to vegetation when alone, but when mixed with other ingredients, as good soil, &c., its presence adds materially to the value of the compound. Decaying but slowly, and at the same time being a good absorbent, it takes up

the roots of the plant, which cling round it for the purpose of taking it up. Its limited supply will always prevent its being used to any great extent for out-door or field work; but for special purposes, where it has been tried, it appears to have given every satisfaction, not as a stimulant, like many manures, but as an enduring item in the compound, to which it might not be improper to apply the term "storekeeper," as its duties seem to be to look out for liquids, and lay in a supply, which it deals out to its customers as wanted.

BURNT CLAY OR BRICKDUST.—This substance fell far short of the popularity of the last-named, although it was brought forward soon afterwards as a sort of rival, as reports circulated in its favour made it appear quite as valuable. Subsequent experience, however, has proved this not to be the case; although as an ingredient in a mixture it is not without its merits. It must, however, be regarded as having failed in one of the principal objects for which it was specially put forth—namely, as a substance in which cuttings of delicate plants or those difficult to propagate were likely to root well. On the contrary, it is inferior in this respect to both sand and charcoal-dust. Burnt clay, however, has the advantage of often being procurable in larger quantities than burnt wood, and on that account it is used more extensively for out-door crops. The refuse of a brickyard or the charred red ashes of clay that have been burnt for the purpose are both excellent substances to work into stiff clayey lands to diminish their adhesiveness, and for this purpose they may be used freely. The mode of burning clay having been explained several times in this Journal it need not be repeated here. As an ingredient in mixtures for potted plants it merely acts as drainage when in a rough state, and in this capacity it is inferior to charcoal.

PEAT.—The acknowledged utility of this requires no comment further than to say, that useful as it is now considered to be, it has in some degree fallen into disrepute during the last eighteen years, or rather that it has not attained that estimation which it was previously expected to do. The remarkable instance of good Pine-growing in France, which was said to be entirely owing to peat being used, created no little stir amongst those who regarded their own especial mixtures as the very best that could be had. From Pines it was easy and natural to try it on other things, and Cucumbers were next successfully experimented on. Grapes, I believe, were tried, but I am not aware of anything particular worthy of note resulting from the trial, and I think the experiments were not repeated. Its applicability to Pines and Cucumbers was held to be established, and it was used by some growers for a few years in their Cucumber-frames. However, I believe it is now only very sparingly employed in that way; while, on the contrary, it is more extensively used than ever on the potting-bench, the number of plants grown almost entirely in it being very great, and for a considerable number it also constitutes a component part of the soil along with leaf mould, maiden earth, &c. In fact, the utility of peat requires no encomium here. What, however, is much wanted is some easily available test by which its properties may be known, without running that risk of doing harm which is sometimes the case when peat of a deleterious nature is used, and there are some kinds which deserve that name by their action on plants. The peat found in places where it has been formed at some early period by the action of water on the substances composing it, differs very widely indeed in its properties as regards plants. Some of the peat so obtained is suited to the wants of only a very limited number of plants, and is poison or little better to the majority of the plants that are more especially the ornaments of the plant-house, the shrubbery, and the flower-border.

I have more than once known fine large Rhododendrons very severely injured by a pernicious kind of boggy peat having been applied to the roots. Not long ago my attention was called to the state of some young plants that had been planted in a soil not by any means suited to the Rhododendron; but to assist it and give the plants a start, about a barrowload of a mixture consisting of bog peat, leaf mould, sand, old sawdust, and woody refuse was added, and it was expected that this compound would start the young Rhododendrons, and that by degrees they would, perhaps, take to the ordinary soil of the bed. Many of the plants, however, never made a root in the mixture, but dwindled away after

the ball which accompanied them was no longer able to maintain them; but some made an effort and succeeded in penetrating with their roots into the ordinary soil of the bed, and thereby succeeded in evading the food that had been provided for them to their dislike. Many other remarkable things might be said of peat, but as an article may possibly appear on this subject at another time, it is needless pursuing the subject further than to affirm peat to be one of the most useful substances known to the gardener.

J. ROBSON.

(To be continued.)

PRUNING VINES.

I HAVE lately come into possession of a vinery which has been erected about fifteen years, containing four Black Hamburgs and two White Grapes. The Black do well, but the White do not. I think they require a different treatment from the Black. What should I do with the White Grapes to make them do well along with the Black? The Black have always borne and ripened a good quantity of fruit. The roots are outside the house, and enter through holes in the wall about 2 feet below the surface, and run 2 feet below the surface of the earth outside, which is very heavy. Should it be dug and manured or not? The leaves have all fallen, and the wood is well ripened. When and how should the pruning be performed?—N. M. D.

[It would relieve those to whom falls the answering of such questions as that of our correspondent relative to the White Grapes from a good deal of guess work and unnecessary "it's" and "and's," if the names of varieties were given as well as other particulars regarding them. White Grapes is a wide term, comprehending distinct varieties of Grapes, which require very different treatment in some points upon which success or failure often depends: consequently we are obliged to approach such questions by a series of uncertain zigzag parallels, instead of replying in a definite and straightforward manner.

If the White Grapes which have failed where Hamburgs have apparently done so well are Muscats, it is possible that the failure may have been caused by too low and moist a temperature when in bloom, which prevents the pollen from getting dry and taking effect. Or, presuming that they are Muscats, the Vines may have been late in being started; in fact, allowed to break late of their own accord, as is often the case where there is only one vinery. The Muscats may not be thoroughly ripened in autumn, requiring, as they do, more fire heat than Hamburgs. This, in conjunction with a moist low temperature when in bloom, may have caused the failure, presuming that they have shown fruit plentifully enough for a crop. To remedy these evils the Muscats should, in a mixed vinery, be always at the hot end of the house, if there be a difference, as there is in most cases; and when in bloom the atmosphere should be dry, with a temperature of at least 70° till they are set.

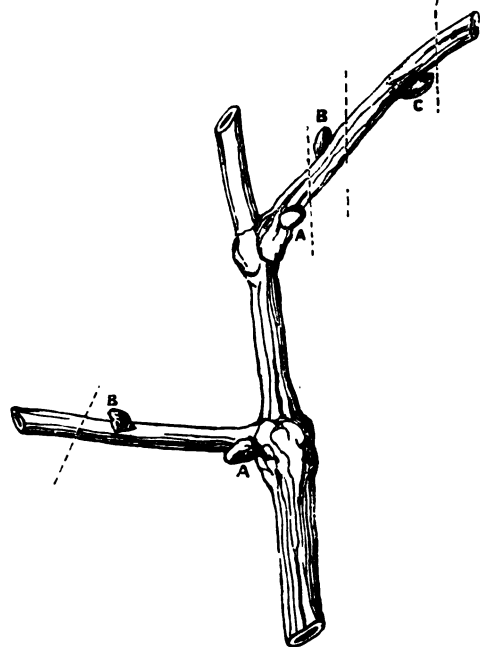
The other White Grapes which were generally planted in cool vineries fifteen years ago, such as Muscadines, Sweetwaters, and one or two more, should not fail where Hamburgs succeed. True, the old Sweetwater is a precarious setter, and should be kept dry, the same as recommended for Muscats when in bloom. On the other hand, if the Vines have failed to show sufficient fruit for a crop, then the fault, if Muscats, has most likely arisen from improperly-ripened wood, and more fire heat must be applied in autumn to ripen the wood more perfectly. Muscats, however, should never be planted in cool vineries; and if our correspondent's White Grapes are Muscats it will be best to inarch them with Muscadines and Sweetwaters, if not convenient to apply more heat to make the wood hard and brown before the leaves are shed. We hope these remarks will meet the case; if not, we will be happy to hear again from our correspondent with fuller details as to sorts, &c.

The great depth of bad soil over the roots is also calculated to retard the proper ripening of the wood if the variety is a Muscat. Roots of Vines at such a depth in uncongenial soil do not perform their work so well as when nearer the surface. In order to bring the roots nearer the surface, the inert soil should be taken away down to the roots, and covered 8 or 9 inches deep, with a compost made up of

two parts turfy loam well chopped, one part mortar rubbish, and one part rotten dung. This will induce the roots to come to the surface, especially if otherwise treated, as detailed in recent Numbers under the head of "Lifting the Roots of Vines, &c," and to which we refer our correspondent, instead of needlessly repeating the matter again.

The digging and manuring of such a depth of bad soil over the roots would only tend to increase the evil, for heavy putty-like soil is only made more unsuitable for Vine roots by its being manured. Were it simply light poor soil, then the addition of some good manure might entice the roots upwards; but not so thoroughly as the method to which reference has been made.

With regard to the pruning, it is one of the most difficult matters to answer in a way that will be certain to meet your case, for Vines in various conditions must be variously pruned to make sure of a crop. In the case of well-ripened Vines we cut right back to the first bud at the base of last year's growth; and most varieties bear well by such a system of pruning, and none better than Muscat of Alexandria. But such close-cutting work is the best way only when Vines are well ripened and strong; and in the case of Vines ripened late with a little application of fire heat it is not to be recommended. In the latter condition it is much safer to leave two eyes, or even to cut at the third eye if it be the most plump and ripened. There is nothing gained by leaving more than three eyes. If the third eye, from which a well-developed leaf has been matured will not yield fruit, then there are none further out from the main stem likely to do so. In fact, the wood at a few eyes further from the base is generally more pithy and less fruitful than at the third bud, for the ripening process begins at the base and progresses to the extremity of the shoot, which is sometimes green when the base is hard and brown. If your Vines are not thoroughly ripened, the best way for you to pursue will be to leave two or three eyes; or to cut wherever there are the roundest buds, and the hardest wood with



the least pith, pruning at the first eye, A, for well-ripened Vines; at the second and third eyes, B and C, whichever of the two is most prominent and hard, for indifferently-ripened Vines or those which are weakly.—D. THOMSON.]

NOTES FROM CUMBERLAND.

I RECENTLY read with much pleasure in your Journal a very instructive account of the Pampas Grass.

Two or three seasons ago I bought two packets of seed.

Those from Mr. Thompson, of Ipswich, I believe all grew; but I was much bothered in weeding them, as, never having seen them in their young state, I could not tell which was "twitch"—i. e., couch grass, and, probably, threw hundreds away. However, I raised to a good size seventy or eighty nice plants. I gave a great number away to persons in various parts of the county, and I do not know what became of the plants. The remainder I planted out and had very bad fortune. Two extremely hard winters set in, which made a clean sweep of nearly everything; and the geese ate the survivors when they were beginning to sprout and do well. The avidity with which the geese looked for them was most remarkable. No matter in whatever secure and secluded nook in the grounds they were planted the geese found them out, as a hare or rabbit does a Pink or bit of Parsley. I kept one plant in a pot in the greenhouse for the first winter, and it is now a splendid object and in fine bloom. I have no doubt that it would have bloomed in a great mass if it had not been for two nights of severe frost in the early part of October. We have also had a dreadful autumn; incessant rain ever since the beginning of September. My plant is in the centre of an "American" bed, and, being close to the wash-house window, receives plenty of soapuds and greasy water. I find it a perfect glutton in this respect, and that it cannot be overdone with rich liquid stuff. May I ask if your correspondents find them evergreen, or only so in mild winters like many other things? Mine never suffered last winter, nor up to this time, and I live in a cold locality, two miles from the north side of Skiddaw.

At the time that I sowed the Pampas Grass I also tried a packet of *Erianthus Ravennae*, which is described as hardier and better in every way. None of my seed came up, and Mr. Thompson informed me that none of his did. I have never seen a plant of it, but it is still puffed and recommended every season. Have any of your correspondents tried it? I also much wish to know if the Pampas Grass ripens seed in England or not?

I am now coming to the main point of my letter. Why is the seed of it so dear, and small plants a shilling each? One spike would contain seeds enough to plant at least half an acre, if not far more.

That it is the finest introduction in its line that we ever knew there cannot be the slightest doubt. If, as we are given to understand, the Pampas Grass covers large plains in South America, or wherever it comes from, could not the seed be imported in large quantities also? Why should it cost a hundred, or, perhaps, a thousand times as much as the seed of cultivated grain, birdseed, &c.? I am firmly of opinion that it might become one of the permanent features of the country, and I do not think the seedsmen are dealing fairly with us by keeping up the present price. Standing permanently a few yards apart it would be a splendid cover for game, and the leaves being very juicy and sweet would be good food for hares in the winter season. If protected till two or three years old no amount of hares would injure the plants.

If, again, the seed were sold at a moderate price, a couple of acres of it on a mountain would be invaluable as a refuge for sheep as well as game in deep snows—certainly much better than the tops of stunted heather, which is all they can procure at certain times. Of course, I would plant it in a snug sheltered place, and protect it till three or four years old—I mean prevent its being eaten. For our mountain sheep it would do splendidly, as they could burrow in it like rabbits, and would have this great advantage, that it would not tear the wool off them, which is the great objection to patches of Hazel, Sloe, Thorn, or Gorse. The number of sheep that lose their lives in this part in a severe winter by being hung in briars, where they go for shelter, is incredible. I suppose I am justified in assuming that it is perfectly hardy under favourable circumstances.

I have often urged and suggested to the Acclimatisation Society the advisability of looking out for hardy shrubs and grasses, affording at the same time food and shelter for game. The British Isles are very badly off in this respect. I have written, along with other gentlemen and naturalists who saw this great want, several letters on this subject to the papers which has hitherto been the organ and exponent of the Acclimatisation Society. This journal, however,

having lately discarded in a great measure its correspondence on natural history, and taken to other subjects, we are at a loss to know how to communicate our wants and information to each other.

What sort of thing is the "Elephant Grass" that the Acclimatisation Society state they have received seeds of? Do any of your readers know anything of its habitat or peculiarities? I could obtain some if it were worth while or if I knew how to treat it.

Amongst other things I may mention that I have a great number of the Tritoma. In the last fine summer we had, I saw some seed advertised in your columns as having ripened about Kingston-on-Thames. I procured a packet, and I believe every seed grew. I have a great number now coming into bloom daily in the open air in December. They seem quite hardy, and some of them are quite different from any I have seen in nursery gardens. Many of the florists about here have lost all their stock long ago. I do not know what to do with mine, as to be in full luxuriance now seems so unnatural, and I am afraid of the effects of frost. If I had had a large greenhouse or orchard-house like some people, I should have had an avenue of them. How well they would have looked along with the *Agapanthus*, which is now in full bloom.

Allow me to deplore the death of Mr. Beaton. Having been a subscriber to your work from the first, I have always read his shrewd and practical remarks with the greatest avidity and pleasure. His death is an irreparable loss to the experimental part of floriculture. I think he was wrong about the pronunciation of *Gladolus*. I ought to be somewhat of a classic, and, taking it from its root, *gladius*, it decidedly ought to be pronounced "Gladdy-o'-Lums," like an Irishman's name, softened somewhat for the sake of euphony.—JACKSON GILLBANKS, *Whitefield, Cumberland.*

RENEWING AND PLANTING A VINE-BORDER.

I AM about to renew my Vine-border, and I intend to plant the Vines inside, so that the roots can pass through arches to the outside border; but I find the crown of the arches is nearly 2 feet lower than the top of the outside border. Shall I have to lower the border? or will it injure the roots by being so deep, as I intend placing the greater portion of the roots as far through to the outside border as I possibly can when I plant the Vines? Also, there is a slate tank, about 6 feet from the front wall, sunk in the inside border level with the surface. Will that injure the roots passing round and near it, as I intend the house it is in to be my early house to start about Christmas, after two or three years? What sorts would you suggest my planting? I shall have room for seven Vines in each house; one house to come on with but little artificial heat.—AN OXONIEN.

[The arches of your vinery front are much too low; and to allow the roots to pass out under such a depth of soil would be very undesirable, and could not fail to act against the success of your Vines, more particularly if your subsoil is cold, and the border only on a level with the surrounding surface. It will therefore be necessary to have the soil not more than 9 or 10 inches above the crown of the arches—in fact we prefer, when it can be done, to have the crown of the arch not more than 6 inches below the surface of the soil. The roots are sure to go out deep enough. Now, if the surface of your border requires to be 2 feet above the arches in order to bring it to the level of the surrounding ground, to have it at the depth in relation to the arches that we have recommended would throw your border considerably below the natural level, which would not only be injurious but very unsightly. Granting that such would be the case, we would recommend that the arches be built up altogether with brick or stone, and that holes be cut in the front wall above the bricks which form the arch. This would not in the least weaken the front of your vinery; and it would let the roots out at the depth of, say, 9 or 10 inches below the surface of the soil. And this is not all that would be gained by such an arrangement: it would prevent the roots from going out deep, which is always desirable, as the tendency of roots is almost always downwards to too great a depth before they take possession of outside borders. We adopted

this plan with two vineries two years ago, and find that it has answered admirably, and saved the reconstruction of the whole front wall.

For your early house it would be a good plan to build up your arches, and not make openings above them till the Vines had made a season's growth in the inside border. We did so with one of the vineries referred to, and find nearly all the roots inside after the Vines have been planted two years. They are just now finding their way into an outside border made the following year, when the openings were made higher up. We do not approve of your placing the greater portion of your young Vine roots in the outside border at planting time. This should just be reversed, because young Vines planted inside the front wall and having the run of both borders always send the great majority of their roots into the outside border, and for forcing this is not desirable, unless bottom heat and protection can be applied to the outside. You should, therefore, whatever you do about confining them to the inside for a year, lay most of the roots towards the inside border.

The slate tank will do no material harm unless it leak. Whatever you do about the arrangement we have recommended, see that your border is well drained, and so that no water can stand about the roots. The materials considered best for its formation you will learn about by referring to back Numbers of this Journal.

For your early house you cannot do better than plant four Black Hamburgs, one Buckland Sweetwater, one Muscat Hâtif de Saumur, and one Bowood Muscat. For your second house—three Black Hamburgs, one Lady Downes', one Raisin de Calabre, one Burchardt's Prince, and one Muscat. The two last-named, particularly the Muscat, should be planted at the hottest end of the house, and the Hamburgs at the coolest, and by such an arrangement you will find that a long succession of Grapes will be afforded. Burchardt's Prince and the Muscat will require more fire heat than the others to ripen them well.—D. T.]

ORCHARD-HOUSES AND PEACH-HOUSES.

In a communication by "T. R." on "Orchard-houses and Peach-houses," the writer says, "Six full-sized Peaches are as many as can be grown on a square foot, either of trellis or wall." Now, if that is not a mistake either of the writer or printer, I think six are far too many to grow on a square foot, and that calculation might mislead some; for even practical gardeners sometimes err on the score of over-cropping. Mr. McEwen says in his "Culture of the Peach and Nectarine," page 10, "You will see what I mean by a heavy crop, when I state that on 450 superficial feet covered with wood, I gathered forty-nine dozen of Peaches, many of which weighed over 8 ozs., and very few under 6½ ozs. This was good work; and I feel convinced that the trees could not have done it without very liberal help." This calculation is not much more than one Peach to the square foot; and the question is, Will a Peach tree support more than that of full-sized, well-flavoured fruit for a number of years in succession?—T. L.

[Sometime the last autumn I observed in a contemporary that twelve Peaches might be allowed to a square foot of trellis. I thought this extraordinary, and consulted Loudon, Thompson's "Gardener's Assistant," and McIntosh; in none of them could I find the question gone into, and so I in my practical way made a square foot of four pieces of lath, and placed it on a wall to which a Peach tree bearing a full crop of fair-sized fruit was trained. I then found that my square took in six Peaches, leaving them plenty of room; they were not very large, but measured from 7 to 8 inches in circumference. I then concluded that that number could be reckoned as a full complement for a healthy Peach tree on a wall or trellis; but at the same time I felt that such a regular crop must be of rare occurrence, and I feel I ought to have so expressed it. A square foot, as every boy knows, contains 144 square inches, six fruit to a square foot would thus give to each 24 inches. This seems a large space on paper; the diameter of a medium-sized Peach may be taken at 2½ inches, so that if a Peach tree would be always healthy and kind in bearing, six good fruit may be grown on a square foot of wall or trellis; but I must confess that in measuring

off a square foot of my Peach trees I thought only about testing the assertion I had seen in print, and not the future of the tree. One Peach to a square foot, or 144 inches to one fruit, seems but a scanty crop on paper; yet if we could see a Peach tree on a wall occupying 200 square feet—that is, on a wall 10 feet in height, filling up a space 20 feet in length, a rare occurrence, two hundred Peaches would be reckoned a fine crop. A gentleman, who amuses himself by growing Peaches for market, informs me that he allows two Peaches to the square foot; for, he says, "Unless they are grown to the weight of 8 or 9 ozs. they do not make the top price, the public at the present day looking so much to the size of fruit." This may be taken as an extreme case, and I should think three Peaches to the square foot may be reckoned as a safe crop, giving large fruit, and not injuring the future of the tree. Amateur Peach-growers may for the future carry out the thinning of their wall or trellis Peaches to a nicety by merely placing a frame of 1 foot in diameter against their tree while thinning the fruit, and thus easily regulate the crop of a large space by measuring off 1 square foot. It is strange that our writers on gardening have not given directions on this head, so far as I am aware; neither have I seen in your columns the question agitated. We have, therefore, to thank "T. L." for his pertinent inquiry.—T. R.]

MR. W. WOOD, OF MARESFIELD.

THE present year has taken away from amongst us many who have made a name in horticulture, and who, both in public and private, have been worthy members of a fraternity that numbers as high-minded and honourable men as are to be found in any calling. Amongst those whom we may call the founders of English horticulture the names of Veitch, Low, and Wood hold a high position; and the head of each of these firms has been taken away during this year, Mr. Wood, of Maresfield, the last of the three having died on the 3rd inst. at the advanced age of 82. In early life Mr. Wood had been engaged in a portion of the public service where qualities of no common order were required, and had seen much of continental life, and that, too, in the best aspects of it. This gave to his conversation (I am told by those who knew him well), a great charm. He had a large fund of anecdotes, and told them with great vivacity and earnestness. At the close of the war he settled at Maresfield, commenced Rose-growing in a small way, gradually increased his business, until in those days, when Rose-growers were fewer than they are now, he used to be found competing, and that successfully, at the great exhibitions of the day. During the past few years declining strength has hindered him from taking that active part in his business which he formerly did; but he has found a worthy successor in his son, Mr. Charles Wood. In his private character Mr. Wood was highly esteemed by all who knew him. He was a kind and indulgent master, and I have heard his old servants speak of him in terms of great affection and esteem. As one looks at the character of those men who have now gone from amongst us, and remembers the high position they held, we can only hope that those who bear their names and hold the positions they won for them, may as worthily fill their places; and I am quite sure that such will be the case with Mr. Wood, of Maresfield, whose son, Mr. Charles Wood, is well known as much for his business habits as for his urbanity and kindness.—D., Deal.

CUTTING OFF THE LEAVES OF STRAWBERRIES.

[We have received another communication from Mr. Quintin Read on this subject, giving quotations to prove that the leaves of plants are at once their lungs and stomach. These we consider needless, for it is a long-acknowledged fact. More strengthening to the advisability of his practice is the following, which forms the conclusion of Mr. Read's letter.]

"I might multiply irrefragable testimonies, but forbear lest I should be considered prolix; and will, therefore, con-

clude these remarks by quoting an observation made by the late Mr. Errington, the respected gardener to Sir Philip Egerton, Bart., of Oulton Park, Cheshire, when writing on the subject of Strawberry-growing, and alluding to the cutting off of the Strawberry leaves a short time after the crop is gathered.

"In an article contributed by him to your Journal, Vol. XVI., August 1856, your correspondent will find the following *apropos* remarks:—'Here let me advert,' says he, 'to the management of the foliage, on which a good deal depends. The old practice of mowing off the leaves soon after the crop was gathered is now universally repudiated, and most justly. It classes well with the barbarous practice, once recognised, of cutting down all the Asparagus possible, in order to strengthen the roots. These conceits, thanks to the gardening press, are gone by, surely for ever.'

"These remarks emanating from one of gardening authority, whose energy and skill in his profession none can gainsay, must certainly have some weight with 'J. B. C. P.,' unless he is so wedded to his own 'barbarous system,' that nothing will induce him to adopt a milder and more careful treatment of a plant producing one of our most delicious fruits.—QUINTIN READ, *Biddulph*."

[Here let the controversy close. Strawberries may be grown according to the scythe system, but very few will adopt it.—EDS. J. OF H.]

MUSHROOM SPAWN.

IN glancing down the advertising columns of your valuable Journal a short time since, my attention was attracted by an advertisement—"How to Grow Mushrooms all the Year round without buying Spawn;" and, thinking it might be something worthy of attention, I procured the instructions, but was much surprised when I received them. They go on to say, "In a very dry place, with well-prepared droppings or short dung, I make up a bed just as if I were going to grow Mushrooms;" then they say, "This I spawn well." Now the advertisement says, "without buying spawn," but one must have spawn in the first place to spawn that bed with; and I think if a bed is to be spawned at all, why not spawn the Mushroom-beds at once and save the time and trouble of spawning the first-named bed, which will probably take, say, six weeks at least? I know you are ever anxious for fair play on all sides: I think for the benefit of your readers it should be expunged from your advertising columns "as a gross imposition."—A JOURNEYMAN IN THE NORTH OF IRELAND.

[You are not the only one who complains of the imposition; and so soon as we learned the truth, we directed that no more advertisements from the same party were to appear in our columns.]

PROPAGATING CENTAUREAS.

DIRECTIONS for propagating the Centaureas have lately appeared in your columns, and March is pointed out as the proper time. A month ago, having to trim a candidissima, I cut up the shoots into bits from 1 to 6 inches long, leaving each with a joint, and all these have struck in the pots they were placed in, half a dozen in each pot. They had the advantage of about 60° of heat; but some pieces which were stuck in the open ground at the same time seem also to have taken. Perhaps this may interest some who wish to gain time.—W. J. J. J.

[The Centaureas are now in flower, and are very beautiful when, be it remembered, they are in flower.]

CHINA, KANSAS, AND THE COTTAGE GARDENER.

I have received the following letter from Mr. Pountney Lane, some 25 miles from the city of London, who writes: "I have just received from you four sorts of material for tying, three of which, from their fineness and roughness, would, no doubt, answer for fine tying, whilst a coarser sort might do for rougher purposes. We can form our own opinion of their economy, as the price of none

per pound or otherwise, is stated. The utility for tying will much depend on the price. Cuba bast when good is a capital material for tying, but it is more expensive than the finest Russian mat. If we could procure bundles of the soft finest bark, of which part of the Russian mat is composed, without being woven at all, we might obtain fine ties at an economical price. When cut from mats there is ever double waste. These samples of Mr. Allison are tougher, and may be split into much smaller threads than Cuba bast, whilst they are almost as soft as the softest and most silky matting; and if the price should be moderate we would have no doubt of their usefulness. Mats are so dear and littery for this purpose, that for much of the flower-garden work we have for years used balls of fine thread, believing them to be neater and more economical.—R. F.

AMMONIATED OXIDE OF IRON AS A MANURE.

I HAVE just received your little work on ammoniacal liquor produced at the gasworks, which I consider very interesting, and can bear testimony to its fertilising properties. Perhaps you would give me your opinion respecting the oxide of iron used by some of the gas companies to purify the gas. It contains a large per-centage of ammonia. I tried some of it upon grass last year: it turned the grass quite white, no doubt because used too strong. I made the inquiry from the Editor of the *Gardeners' Chronicle*, as I take both papers, but he appears unable to answer the question; but as it seems to be one you have studied, you will, doubtless, be able to enlighten me. The annexed is an analysis:—

Water	22.68
Organic matter	40.30
Oxide and sulphide of iron	31.33
Sand	5.40
Sulphate and carbonate of ammonia	11.30

—A SUBSCRIBER, *Liverpool*.

100.00

[There is no doubt that this ammoniated oxide of iron is valuable as a manure. We have used it on a small scale, first combining the iron as well as the ammonia with sulphuric acid, thus converting both into sulphates, each of which is well known as a fertiliser. The quantity of sulphuric acid required must vary according to circumstances, but no harm would occur to the crops even if all the oxide was not converted into sulphate of iron. Three or four hundredweight of the sulphated compound thus formed mixed with twice its weight of ashes, and sown by hand in early spring, would be a good top-dressing for grass. We used three times that quantity with good effect dug into the soil at the time of planting Potatoes.]

THE GARDENERS' YEAR-BOOK, ALMANACK, AND DIRECTORY, 1864.

By Robert Hogg, LL.D., F.L.S., &c.

THIS is the fifth issue of this valuable manual, and much the best, though its predecessors were very good. For many purposes, and especially for reference, the first issue for 1860 is almost as valuable as the present for 1864. With the exception of the main feature of a directory, which can only be altered and enlarged to meet changed circumstances, there is a great variety of matter, and sometimes a continuation of the same subject from one year to another. For instance: in 1860 and 1861 there was a very full calendar of gardening operations, but this calendar was omitted in 1862 and 1863. In the four preceding years the space in the middle of the page for the almanack of the months was chiefly devoted to facts in natural history, such as the arrival of birds and the flowering and foliage of plants. This season these twelve spaces have been devoted to a kitchen-garden calendar; and next year the same space is to be given to a flower-garden calendar, to be followed by a fruit calendar. Again: in 1863 there is a nice chapter, with a number of engravings, on the seeds of plants; and in the present issue there is a chapter in continuation on the germination of seeds.

Besides the usual materials of an almanack as to taxation, the Post Office regulations, and British monies, weights, and

measures, there are useful tables as to foreign monies, weights, &c., as respects France, Belgium, and Prussia. The other novelties are—a chapter on absorption, a very valuable article on aphides, a valuable summary of the meteorology of the months, and an essay on and a description of the new Roses of 1862 and 1863, as proved by Mr. William Paul, the descriptions being of great value to the Rose-grower. Besides such matters, the two great features of the work have hitherto been a descriptive list of the new vegetables, fruits, and flowers of the past season, and a trade directory of all the nurserymen, seedsmen, and florists, so far as known in England, Scotland, Ireland, and the Channel Islands, and the principal firms on the continent, and in previous issues all the principal nurserymen in America. To this has been added this season a new feature, worth far more than the price, 1s., charged for the little book. It consists in a list, extending to some twenty-two pages, of the designations of some of “the most important of the seats of the nobility and gentry in Great Britain and Ireland, the names of the owners, their gardeners, and the post towns near which they are situated.” No doubt this list will be rendered more full, complete, and free from mistakes every year, and will fill up a want long felt. Many a time when we would have liked to have visited a place have we been deterred from failing to discover how we were to reach it, or how we could gain access by a letter to the gardener. There will be no difficulty as to writing now, as the post town and the county are given. At first sight we thought the railway station and the distance in miles would have been better than the post town, which is often a long way from the place; but on further consideration we think the post town is the best, as for 2d. for a letter and an answer all the necessary information may be obtained. The mere distance from a station is a matter of great importance to the visiting gardener, unless there be a party to share the expense. Not so long ago, when rather tired, we were asked for more money to take us two miles, wait an hour, and bring us back again, than we have paid for a jaunting-car for a day in Ireland, and making the driver a pleasing companion by giving him something extra for himself into the bargain. All who go from home once or twice a-year, and wish to see something fresh will hail this list as a boon.

The new plants of the year and where figured, described or exhibited are fully given; and long lists and descriptions of florists' flowers with the awards they have respectively taken, occupy nearly twenty closely-printed pages, and must be of great value to enthusiastic amateurs. The descriptions of new and notable fruits occupy five pages, and to these we refer our readers.—F.

RONDELETIA SPECIOSA CULTURE.

IN answer to an inquiry from “G. E.,” it is a stove plant, and one of the handsomest in cultivation for exhibition or decorative purposes. *R. speciosa* major, a variety having a more vigorous habit and finer foliage and bloom, is the most desirable kind. You leave us in the dark as to the time of exhibition and the present size of the plant. Supposing, however, that it is strong and in good health, you will pot it in March, giving a good shift, draining well, and using a compost of sandy fibry peat one-half, loam from rotted turves one-fourth, leaf soil, pieces of charcoal the size of walnuts, and silver sand in equal parts the remaining fourth. The whole should be well incorporated, and be in a moderately dry state previous to its being used for potting. The roots should have as much of the old soil taken away from them as can be done without destroying the fibres. Place in the stove, and syringe overhead frequently, but keep rather dry at the root until growth fairly commences; then water more freely, but still allow the soil to become dry before water is applied.

A moist atmosphere should be preserved until the plant has made considerable growth—say shoots 9 inches long (which should not be stopped, for the blooms come from the ends of the shoots), then keep rather drier, and let the plant have all the light possible in every stage of its growth, but more at this period of the plant's growth than at any other time. When the trusses begin to open, a little weak manure water applied twice a-week will materially increase

the size of the blooms, and an occasional syringing is advantageous. Towards the time when the flowers expand more water should be given, and abundance when the plant is in bloom. It is usually trained round sticks so as to give it the appearance of a globe, and this is not an undesirable method. A temperature of 55° to 65° suits it in winter, and 65° by night and 75° by day when growing, with abundant ventilation on all favourable opportunities. Plants treated in the above way usually flower in July and August.

It may be necessary to retard or keep the plant back, and this can be done by keeping it cool; or to force it into bloom in order to have it in flower at the right time, the weakest and straggling shoots should be removed now, so as to admit light to the stems, light being the agent by which it is caused to bloom profusely: therefore, the shoots should not be tied one upon the other, but light must be admitted to all parts of the plant alike, or it will become lopsided or an ugly specimen.

CROCUS IMPERATONIUS.

YOUR correspondent will find this lovely Italian less tender than might be imagined. It will thrive and increase out of doors if carefully grown in a warm corner in pure sandy loam, and lifted every year, to be replanted after being kept for a week or two in a pot of dry earth to ripen the bulbs.

Although starting early, its flowering out of doors is prolonged on into the milder weather, and it may be often seen blooming in company with the earlier garden Crocuses. I grow it myself in a special sandy bed made up like a florist's Carnation-bed. If the weather is harsh I protect by a glass light, supported on four posts at the corners. This is especially necessary for the autumnal sorts, the blossoms of which suffer more from the wind and cold rains of autumn than *Imperatoni* does from our rude early English spring.

It is useless to attempt the cultivation of the genus in pots. The Dean of Manchester, however, kept his marvellous collection of them principally in pots plunged in a bed of sand. Had your correspondent mentioned his case earlier I should have had pleasure in sending him good bulbs. I obtained my bulbs from the hill above Terracina.—C.

CATTLE AMONG YEW.

AS you ask for information with respect to the poisonous qualities of the Yew tree, there is no doubt in my mind that, under certain circumstances, there is danger; but my own cattle have never yet suffered. I attribute this fact to their having plenty of other food. In one small field near my house there are nine Yew trees of about thirty-eight years' growth. In another field there are five of the same age. Into these fields I always have turned my milking cows in the early spring and at other times. My young cattle also go there. My horses and sheep have accompanied them, and I never have had any accident.

My neighbour some few years since lost several heifers which had broken through the fences, from eating Yew in a plantation; but their pasture was a very poor one. If cattle are driven by hunger to eat Yew, and probably the same may be said of many other sorts of evergreens, it will kill them.—P.

[Our correspondent is a clergyman, and, from this statement, certainly one of the most venturesome in the Clergy List.]

DWARF GROWTH OF LAURELS UNDER LARGE ELM TREES.

THERE are various situations where it is almost impossible for any kind of shrub to thrive, and, as an instance, the situation above alluded to has frequently been planted, and always without success, with various kinds of evergreens.

The border that I now allude to faces due south, and is backed by a wall about 10 feet high, which is very neatly covered with Ivy from the bottom to the top. In spite of

the huge limbs and branches from the large Elms that over-shade it, the Ivy succeeds very well. About four years ago it was determined that nothing more in the way of large plants should be placed in this border, to be subjected to the shade and drip that the other evergreens had previously suffered from. The border was cleared of all its half-perished plants. It then received a liberal supply of manure, which was trenched-in to the depth of 2 feet, and during the process of trenching care was taken that every root from the old plants was extracted. A portion of the border was then planted very thickly with common Laurels, from 18 inches to 2 feet in height, the largest plants being placed at the back, while the smallest came to the front. Thus a gradual slope from the back to the front is maintained. They have been cut back each year to the desired height, which is 2 feet at the back, and 18 inches in front. By so doing they have broken very thickly and regularly, nearly every particle of ground being covered. The beautiful appearance they present is so much admired by every one that has seen them, that we have been induced to plant more extensively this autumn.

I have seen the Periwinkle and Ivy succeed very well as a more prostrate growth, but the Laurels are by far the neatest when attended to, and in every way superior to the abovenamed.—J. B. C. P.

CELERY IN COCOA-NUT FIBRE REFUSE.

To blanch Celery in cocoa-nut fibre place a straight row of laths, barrel-staves, or old pea-sticks on end in the earth on each side of the Celery. Allowing 4 inches from the Celery these two fences will be about 1 foot from each other, and they should be as high as the Celery is required to be blanched. Then with the refuse fill up on each side of the Celery, and be careful of the centre leaves. Slope the materials outwards from the plants, so that heavy rains may pass by the outside of the row into the trench. The fibre keeps the Celery in good condition longer than anything I know, either during a mild or severe winter. No worm of any kind touches it. The flavour is very much improved, and the plants are dug up with ease.

If the fibre is considered too expensive, keep it in a shed from year to year, or in a dry corner—not over the roots of trees, because roots revel in it, and in a short time they would convert it to their own nourishment. If there is no other convenient keeping-place, use four sheep-hurdles on edge in a square to keep it together, or dig a pit in the earth. But to keep it long it must be dry. Ten shillings worth in Kingston would blanch three hundred heads of Celery annually for five years. One trial of this will remove every doubt and objection.

I have tried moss, sawdust, straw, fern, ashes, and sand, yet am convinced that no person will use for Celery-blanching anything we know of at present, after trying the fibre refuse. I will add that cocoa-nut fibre refuse in preparing large trees for transplanting is invaluable. Every species of tree roots rapidly in it, and it adheres to the roots, rendering the balls of earth one-third less in weight, and the trees recover more speedily from the check arising from removal.—JOHN BASS, *Surbiton*.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE November meeting of the Entomological Society was presided over by F. Smith, Esq., the President; and amongst the donations to the library received since the last meeting was Mr. Thomson's work on the Scandinavian Coleoptera; Colonel Metchulsky's "Etudes Entomologiques;" and some numbers of Mr. Wilson's "Farm and Garden," published at Adelaide in South Australia. Mr. Bates, the distinguished traveller in the Amazon district of South America, and author of some of the most remarkable entomological memoirs which have recently appeared, having been proposed as a member of the Society, the ordinary rules relative to the election of members were dispensed with, and he was unanimously elected a member by acclamation.

The Secretary reported acquisition which was made at the Council taken in its own name.

January meeting, with the view to alter several of the bye-laws of the Society relative to the working of the Publication and Library Committees, honorary members, &c.

The President exhibited the nest of *Trigona carbonaria*, the small stingless Honey Bee of Australia, and which appeared to consist of a large mass of waxen materials formed into branches and stems, resembling corallines; amongst which, on the outer branches, were attached a number of oval cells, filled with honey, resembling the honey-pots of the humble bees. The nest, however, was fixed within a box, so that the interior could not be examined. It had been received from Queensland, by Mr. Woodbury, so well known to the readers of this Journal for his excellent observations and experiments on the honey bee of this country, and by whom it had been transferred to the British Museum. The President also exhibited the mass of hexagonal cocoons formed by *Tenthredo* (*Deilocerus*) *Ellisii*, a South American kind of Sawfly, which had been described and figured by the late Mr. Carter in the Transactions of the Linnean Society. It was remarkable as showing that in a family so far removed from the Bees as the *Tenthredinidae*, a similar kind of cell was formed by the larvæ when working in society.

Professor Westwood alluded to nearly similar details in the cocoons of the social *Microgaster alvearius* and the masses of cocoons of *Ilythia sociella*. The hexagonal form of the cells in these nests led to considerable discussion, as to whether it was an instinct inseparably associated with the construction and existence of the insects by which these nests were formed, or merely the result of the juxtaposition of the cocoons or cells.

The President also exhibited some specimens of the small Ermine Moth, *Hyponomeuta padella*, stated to have been reared from larvæ found on unripe ears of corn in Suffolk, every grain having been attacked by the caterpillars, and the Moths having been produced in the box in which the caterpillars were placed. It was, however, the general opinion of the members present, that there must have been some mistake in the circumstances connected with the development of these Moths, the caterpillars of which are generally found on trees.

Mr. F. Bond exhibited a drawing of the caterpillar of the Sphinx *Convolvuli*, found on the small Bindweed, on the 17th of September, at St. Leonard's; also a beautifully preserved specimen of a remarkable dark-coloured variety of the caterpillar of the Death's-head Moth, taken on the Ash, prepared by Mr. Baker, of Cambridge, who has acquired the art of preserving caterpillars with great success.

Mr. F. Moore exhibited some impressions of the wings of Indian Lepidoptera taken upon waxed paper; and Mr. Francis specimens of the rare *Anthrribus albinus*, taken at Folkestone, in September.

Mr. MacLachlan exhibited an interesting series of the cases formed by the aquatic caterpillars of the different genera of British Trichoptera or Caddice Flies. In some cases the small tube of silk was coated with particles of stone, in others with shells, in others with small twigs, and in some with these materials combined; each species having a special method of its own for the formation of its case, the species of the genus *Setodes* enclosing only silk in their cases.

Professor Westwood exhibited a large sheet of a white silken tissue found at the bottom of a biscuit-chest, the contents of which had been attacked by larvæ, which had been supposed to be those of some Dipterous insect. It was, however, considered by the members present, that the tissue was spun by the larvæ of some Lepidopterous insect, probably *Tinea granella*, not as a cocoon, but as a carpet to enable it to creep along with greater facility. The specimen had been communicated by Dr. Cuthbert Collingwood.

Mr. G. R. Waterhouse exhibited specimens of a small Beetle from the Kirbian collection, labelled as *Scymnus bis-bipustulatus*, of Marsham, which Mr. Waterhouse regarded as identical with the *Scymnus quadrilunulatus*, of Mulsant.

Mr. H. T. Stainton made some observations on the six European species of the genus *Cosmopterix*, comprising some of the most beautiful species of Microlepidoptera, three of which are natives of this country, including *Tinea eximia* and *T. brachylla*.

WELTON PLACE, NEAR DAVENTRY.

ANTIQUARIES, like the mummies and other relics with which they are conversant, are proverbially dry fellows, and no exception to this characteristic was the trustworthy antiquary of Northamptonshire when he wrote of Welton Place,—"It is a commodious residence, pleasantly situated on a gentle elevation west of the village." These are facts, certainly, but they are very dry facts, and give no more correct idea of Welton Place than would the statement that the Venus de Medici is "the figure of a naked woman with her head inclined on one side." Let us enter a little more into detail; but before doing so we must indulge in a thought forced upon us, that this Daventry and its vicinity appear more than most localities to have been the seed-bed and harvest ground of plots and revolutions.

We spoke two or three months ago of Fawsley, and its connection with the Cromwellian revolution. Not far away is Naseby and Holdenby, the fatal battle ground and prison of Charles I.; Kenilworth, so associated with the evil days of Amy Robsart, is within a few miles; still closer is Catesby, whose owner was so connected with the Gunpowder Plot, and this Welton Place had for its lord another Catesby, who bowed down before the headman for being the partisan of Richard Crookback, from the murder-night of the Princes in the Tower until his last struggle on Bosworth Field.

The present lord of Welton, however, is not likely to become implicated in any such undertakings. His pursuits, though more obscure and less stirring, are far more ennobling and peaceful; and when we state that this same lord is none other than Major Trevor Clarke, the ardent horticulturist and successful hybridiser of several important genera of plants, our readers will be able to form an opinion as to the "goings on" at Welton.

The house is "pleasantly situated" on a high elevation, the ground falling away from it rather abruptly to the east and the north. On the latter side, and immediately in front of the house, is a large sheet of water clothed with the white and yellow Water Lilies, and very tastefully planted round the margin. Here and there beautiful landscape effects are produced, stretching far away into the fine old timbered park beyond, and these heightened by the introduction of some of the best Conifers, such as *Cedrus deodara*, *Cryptomeria japonica*, which succeeds admirably near the edge of the water; *Abies Douglasii*, *Pinus excelsa*, and several others.

There is no attempt at what may be called the modern school here. No "bedding-out," no "polychromes," no blazes of colour; but there are good examples of the old-fashioned botanico-horticultural style, where there is a fine collection of curious plants now never seen in modern establishments, and which are grown for the love of them. Here, too, experiments are conducted of all possible kinds in culture and hybridising; and those who can appreciate scientific gardening rather than garden decoration, will find here much to amuse and to instruct them.

Unfortunately, when we called Major Clarke was from home, and we were consequently deprived of the key to much that would have been interesting to us. Still, however, we made the most of it, and remarked a great deal that required no illustration.

The principal glass structure is a half-span botanic stove 60 feet long by 18, and about 16 feet high. Down the centre runs a long bed built after the fashion of a tan bed, but is now covered in with perforated malt-kiln quarries supported on short brick walls, and heated by a hot-water tank upon Weeks's principle. This forms a central stand for tall tropical plants in large pots, which thrive remarkably well on this warm floor, while a continual current of moistened air rises through the pierced quarries. A part of this bed or pit is converted into a tank through which the hot-water pipes pass; and this again is surmounted by a tall piece of rockwork. In front of this is an ordinary plant-stage; and behind it, shaded by the tall tropics, are grown a select lot of Ferns, Orchids, and other shade and moisture-loving plants. The back wall is allowed to be as damp and moist as possible; and is covered with a perfect crop of seedling Ferns, with Orchids and epiphytes of various kinds. The house is kept at a low temperature with much ventilation, especially at night; and was designed by the owner to grow plants from all climates, and as a

convenient place for horticultural experiment all the year round. A great number of species, and many rare and curious things, are collected here—more than met the eye, in fact, and the owner was not there to explain. A few handsome specimens of plants of interest, such as Cinnamon, Ginger, Nutmegs, and Cloves, with Pepper and Allspice, Arrow-root and Rice, Tea, Coffee, Sugar, &c., were visible signs of the peculiar taste of the owner; and a plant of Vanilla rambling about the rock, with *Renanthera* and other strange things, had taken to the rafters, and is bidding fair to be in a condition to flavour the Coffee. Many of the plants, large and small, were turned out to grass in the experimental hot border out of doors. Bulbs and Scitamineae were well represented. *Mantisia saltatoria*, *Canna iridiflora*, glauca, and flaccida, *Coburgia* in bloom, *Stenomesson breviflorum*, and other rare Chilians, and *Crinum Forbesianum* were noted, with the rare and curious Water Sensitive Plant *Neptunia plena*. Cotton plants of various kinds were being crossed with a view to producing improved sorts for cultivation in India, the result of which has recently appeared in the pages of our contemporary; a sufficient number of such things as *Ficus*, *Dracena*, &c., to give ornament. The houses contain three water-tanks besides the central one. One of these, in a shaded part of the house, was backed by rockwork alive with Ferns, and overtopped by a huge growth of *Philodendron* in fruit and blossom. Water is laid on, so that the rock parts are made dripping at pleasure.

After the range of houses, the subject of greatest interest is the geothermal-bed, or, as it is, we believe, sometimes called, the tropical garden. This bed is on an elevated terrace a little higher than the range of houses, and is fully exposed to the atmosphere. It is 21 feet long and 9 feet wide. The whole bottom of the bed is a hollow chamber, upon which the soil rests, 18 inches deep. All round this hollow chamber is a three-inch hot-water pipe connected with a Burbidge & Healy's boiler, and this forms the heating arrangements. In this bed we observed fine specimens of *Aloe arbores*; an immense Cockscomb, 15 inches across; Bamboos; and a thriving Sensitive Plant. *Stephanotis floribunda* was making a fine growth, as was also *Mandevilla suaveolens*, which had every appearance as if it would bloom in September. Of *Ficus elastica* there were fine, tall, robust plants, as there were also of *Datura arborea*, *Poinsettia pulcherrima*, *Jasminum Sambac*, and numerous *Casmas*. *Aralia papyrifera* appeared to do better here than it did in-doors, having made larger foliage, and *Richardia ethiopica* stood out all the winter, forming stout, stocky plants, and making luxuriant growths.

In the kitchen garden is a noble standard Apricot tree of the true Brussels variety, which had an excellent crop on it. Here we also observed a novel method of treating the White Rocket Candytuft. It was managed much in the same way as the large Chrysanthemums were, which this season so astonished the *habitues* of the South Kensington Conservatory. All the side shoots were pinched off as they appeared, and the plant trained to a single stem, which was terminated in consequence of this treatment with a spike of unusually large flowers, 6 inches long, like that of a Hyacinth.

After strolling about till we had seen all the gardening matters, and just as we were about to leave, the gardener asked us if we would like to see Lady Pearson's wilderness. After such a gardening treat we thought we did not care much about a wilderness, and so thanking him we declined, determining to return with all speed to Daventry. "It's well worth seeing, sir," said the gardener. "Her ladyship takes a great interest in it, she has half a dozen men always doing something to it." At this intelligence we were somewhat interested, and wondered what sort of a wilderness it could be that had half a dozen men always doing something to it; and so we recanting, agreed just to have a look.

Entering by a small wicket near the north-east corner of the mansion, we were led along a narrow winding path, not more than 5 or 6 feet wide, which, if we recollect rightly, becomes narrower still as we proceed. After travelling some distance we turned sharply to the left, and entered what appears to be a rustic summer-house, and there "the wilderness," as represented in our engraving, bursts upon the eye. "Do you call this a wilderness?" Yes, sir; that's what her

ladyship calls it." "And is it natural or artificial?" we inquired. "It's all her ladyship's own work, sir; she did it all herself."

At this moment Lady Pearson, who is Mrs. Clarke's mother, and who resides at Welton, entered "the wilderness," and received us with every mark of kindness and welcome. We were now in a fair way of knowing more about the wilderness, the history of which is as follows:—

Some years ago, when Lady Pearson came to reside with Major Clarke, she requested that she might have a piece of ground in any waste corner where she might do just what

she liked, and with no one to interfere with her. Being a lady of great taste, with a correct eye for the beautiful, and withal of great mental as well as physical activity, Lady Pearson set about creating—not adapting, nor abating, but—literally creating this "wilderness," which now abounds with so many fine landscape effects. The spot which is now occupied with the subject of our engraving was formerly a sort of rubbish-corner in the park adjoining the high road and the village; and the building, which everybody would take for a rustic cottage, was, and we believe is still, the end of a stable or some such structure. How the scene has



been changed our readers can imagine from our artist's representation of it. But this is only one corner of "the wilderness."

Following the path which leads past the cottage and under the rustic bridge we followed the stream, and bearing round to the right we encountered a scene of far greater extent and of a bolder character. In the foreground is a Swiss cottage with its rustic gallery and overhanging roof; and here her ladyship has an aviary of rare and interesting birds, a museum, and picture gallery. The scenery around this cottage is varied and beautiful in the extreme;

the water is skilfully disposed; here as a miniature lake with a sinuous and now and then retiring outline, and there running off in a lively babbling stream, making music as it flows. Still continuing our course beyond the Swiss cottage we enter a bold rocky region rising precipitously all round, the monotony being broken by the advancing and retiring outline, the shady nooks, and the tasteful style in which it is planted. All natural effects are here represented. Entrances to caverns, by the fidelity of their representation, seem as if they penetrated far into the hill, and attract the curious merely to find that they are not a yard in depth

Large fissures gape as if in agony from some great internal convulsion. Shelving rocks jut out in threatening aspects, and every part of the illusion is so well sustained as to call forth all one's admiration. The planting also is faithfully and tastefully managed; and we can conscientiously say that we never saw a piece of artificial landscape that afforded us greater gratification, or which reflected greater credit on the designer.

GREENHOUSE BLINDS.

As the time is now approaching when winter blinds and mats will be put in requisition, the following hint may not come amiss to some of your correspondents.

In "Greenhouses for the Many," page 11, is a description of a roller blind for a greenhouse roof, and the author remarks, "There is some little accommodation [observation?] required to learn how best to get the far end of the pole to reach its destination at the same time as the near end," &c. But he does not tell us how to do it, and the natural tendency of the blind to wind up "slantindicular," as Americans say, is very annoying, besides the risk run of the pole smashing the glass unless there are several bearers (see fig. 1.).

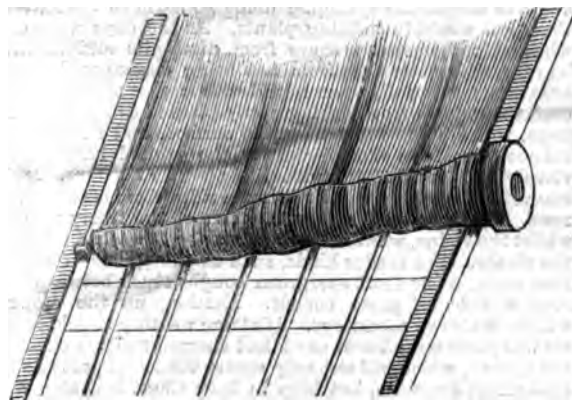


Fig. 1.—My former Style.

Having, within the last few days hit upon a very simple mode of overcoming this difficulty, I beg to offer it to your Journal, as it may be of service to others. I do not think the author of the above could have been aware of it, or he would certainly have mentioned such a simple contrivance.

The improvement consists merely in fixing on the "far end" of the roller a disk of wood, as shown in the sketch (fig. 2, B).

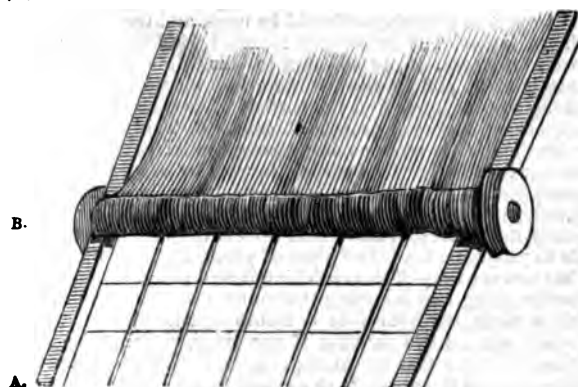


Fig. 2.—My present Style.

It will at once be seen that, as the roller blind revolves, any tendency of the pole to get out of the right line is immediately checked by the wheel pressing against the bearer (A), and the pole is forced to ascend properly—Voilà tout. "Simple comme bonjour," as Balzac says.—LXX.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Broccoli, the weather, up to the present time, having been so favourable to its growth, it is advisable to dig it up, and lay it in trenches in nearly a horizontal position, covering the roots and stem up to the leaves: this has the effect of checking its luxuriant growth, and of protecting the hearts of the plants in severe weather. *Cabbage*, earth-up, if not done, the weather now being favourable for that purpose. *Carrots*, if young ones are wanted very early, seed should now be sown on a slight hotbed. *Endive*, take advantage of the present fine weather to tie-up and house a quantity. *Radishes*, every fine mild day draw off the lights entirely this will give them strength to form bottoms.

FLOWER GARDEN.

This is a season of the year which may be turned to good account by taking a retrospective glance of the labours of the year that is passing away. To profit by such an examination it ought to be done most faithfully and most strictly. Where you find that anything which would have added to the attractions of this department has been omitted during the past season note it, and resolve that it shall be attempted in due time; recollect what has been improperly performed, and make up your mind that it shall not be so when another opportunity shall present itself. You may have been prosecuting a plan which has proved unsuccessful; consider if it is worth trying again; if so, persevere during the ensuing season, and your efforts may be crowned with success. Where the tenderer varieties of *Roses* are found to require protection, this should be applied at once, if not already done, otherwise it may soon be too late to save them. The leaves being all thoroughly cleared and removed, the next thing to be thought of is to take advantage of frosty weather (when other operations are temporarily closed) in running the saw, chisel, and knife through the overgrown shrubs, not with the idea of destroying the picturesque character of shrubs and evergreens which have reached their full expressions, but in order to protect the more delicate from the tyranny of their stronger neighbours; to remove dead branches, and to preserve a due right of passage through the plantation walk. The very mild season has already caused early or shallow-planted *Tulips* to show above ground; it is advisable as soon as observed to put a small quantity of heath or any other light mould over them, to protect them from frost and cutting winds. This may not be applied regularly over the bed, but in small cones over each plant as it shows itself. *Carnations* and *Picotees* being now in a luxuriant state should be carefully examined, the foliage in some situations is apt to get spotted. As soon as this is observed remove the diseased leaf with a pair of sharp-pointed scissors, or the disease will spread through the stock most readily. Examine the axils of the foliage, dust and dirt are apt to lodge therein, this should be carefully removed. *Polyanthuses* are showing flower, the trusses to be removed as they appear, and the plants in pots to be placed in a northern exposure.

FRUIT GARDEN.

Some wall trees, as *Pears*, *Plums*, *Cherries*, &c., are often attacked by scale, in which case the infected trees before they are nailed should be washed with water of the temperature of 160°. Gishurst compound applied in the shape of a strong lather has likewise been found to be a cure for scale on fruit trees.

STOVE.

Here all should be still and quiet. Keep a moderate heat of from 50° to 60°, and give plenty of air. The *Ixoras* to be elevated near the glass to set their bloom, and to have plenty of air at all favourable times. Keep them comparatively dry. *Stephanotis*, *Allamandas*, &c., may be potted and trained preparatory to staking after Christmas, and the staking of all succulent plants to be proceeded with as fast as possible.

GREENHOUSE AND CONSERVATORY.

The weather has been so highly favourable for hardwooded plants that many of them are growing as freely at the present time as if it were September. As this young growth will be found very tender, abundance of air must be given to the plants, and great precautions taken to guard against King Frost's stealing unexpectedly a march upon you, as

a slight frost in the present tender state of the young wood would do very serious injury. When, however, you guard against frost, take care also to avoid overheating the houses, and give all the air possible at every favourable time. Water cautiously and in the morning, but take equal care not to allow any plant to suffer from the want of it. Look well to plants in a growing state, such as Pimeleas and all the New Holland plants.

FORCING-PIT.

Introduce such plants as are generally used and frequently recommended for forcing, especially the sweet-scented as Lily of the Valley, Sweet Briar, Lilacs, Roses, and bulbous plants. All plants intended for forcing in succession should be under temporary covering of some kind. An open shed is as good a place as they can be put in, or under the stage of the greenhouse.

PITS AND FRAMES.

The abundance of light with which the plants in these structures have been favoured (there having been scarcely any need to have recourse to protective measures in the shape of covering), combined with the mild weather, has excited growth, and a disposition to grow long and straggling. To counteract this some attention will be required on the part of the cultivator; a stiff dwarf habit is easily attained by a frequent use of the finger and thumb. Geraniums, Ageratums, and Calceolarias are very liable to become damp and mouldy; remove all mouldy leaves as soon as they are discovered, or they will be certain to contaminate others, and thus spread disease over the whole pit or frame. It is necessary, in order to keep flower-garden plants in first-rate condition, to give them a limited supply of water, abundance of light, a free circulation of air, and a dry atmosphere. Abundant preparations must take place in this department; a good stock of garden mats to be procured and tied for covering purposes; labels rewritten; and seed-drawers thoroughly examined, cleaned out, and the old seeds dated and classified, in order that their relative value may be readily known. The new seeds will, of course, want arranging.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

VERY much the same kind of work in all departments as last week. Raked leaves, trenched-up ground, removed covering from Sea-kale in Mushroom-house, as it was coming faster than we wanted it. Placed a few barrowloads of hot leaves close to a mound of Rhubarb in the same place, which was not coming quite so fast as wanted, and the additional heat about the large roots has acted almost like magic. Placed a lot more of Sea-kale in pots in Mushroom-house; the advantage of which is, that we can give heat round the pots as we like, and if not wanted for use we can move the pots to a cool, dark place, or make it dark for the Kale by putting a pot overhead, and filling up all the holes. It is much better to do this than allow the Kale to be long and lanky. From 6 to 8 inches is a good size, and the thicker and firmer the leaves the better it will look at table. Put in a succession of Mint and other herbs likely to be wanted green, where there was little heat. Have had some gatherings of Peas from an orchard-house, but though there are plenty of blooms, they do not seem to set in dull, cold weather. Of course, with a little dry heat, they might be had all the winter. Earthened-up Dwarf Kidney Beans in bloom in pots in a little heat, and potted off some more. It is more handy having them in pots now than planting them out. At this season they like a little dry heat. When growing them largely after January in a heated pit, we used to sow a succession as soon as the first showed flower-buds, sowing in rows 2 feet apart, and earthing-up. By the time the first was half gathered we sowed in the furrows, and the plants were up and strong before we pulled the first ones up to earth-up what would be the third crop, and so on with the others. By such close work with a pit of from four to six lights, we could keep a regular succession until we obtained a supply first with a slight protection, and then out of doors. Earthened-up a piece of Mushroom-bed, and set another piece preparing. Have done nothing with Chicory, Lettuce, and Endive as abundant Cauliflowers, &c.

still plentiful in sheds and under glass. Stirred the ground among young Cauliflowers, Lettuces, Cabbages, &c. We place some burnt earth and rubbish among these young plants as soon as we can get at them. Gave abundance of air to Radishes, Lettuces, Cauliflowers, &c., in frames, when the weather was fine. In cloudy, hazy weather elevated the sashes back and front, that there might be a good draught through.

FRUIT GARDEN.

Examined the Strawberry plants placed in frames with a slight hotbed of leaves under them. Found the heat nice and mild. It will be recollected that the pots were merely set on the surface of the bed in case there should be too much heat if plunged. As the heat is mild, and that the sides of the pots may feel the benefit of it as well as the bottoms, stuck some dry leaves in the openings between the pots without moving them. The plants are just moving, and as yet need no water, and will not likely need any until they are moved into dry heat. Watered a few Black Prince placed in a narrow Vine pit. Watered the Vines there, too, with warm water; and as the temperature at night will average 55°, will remove other plants, such as small Geraniums, &c., and fill as undergrowth with Dwarf Kidney Beans. Syringed these Vines twice a-day, oftener if the sun was bright, the syringing doing no harm to the leaves, though it would to bedding plants. As the days were dry wheeled out wasted manure from earth-pits and frames, leaving all matter that from not being decomposed would heat again, especially when mixed with fresher material, and used the manure for mulching newly-planted dwarf standard trees, to keep the roots near the surface, and for placing between the rows of Strawberries, the ground having previously been stirred up with the points of a fork. This manurial matter is put a little in the ridge-form between the rows, and, therefore, breaks the force of the frosty winds; whilst the virtue, what little there may be, is washed towards the plants. For tender kinds, such as the Queen, if severe frost come, a few short evergreen boughs stuck between the rows will be of great benefit. Earthing-up the crowns a little is also an advantage. If severe weather should come we will place some burnt earth and charred rubbish close to the crowns, which will not only secure the lower part of the stems from exposure, but help to keep slugs, &c., at a distance. A Dutch hoe run through the manure between the rows will make all smooth in the spring.

We may here further state, in answer to several inquiries, 1, That a stiffish loam is the best of all soils for Strawberries. 2, That light sandy soils should not only have extra manure, but should, after trenching, be trodden well before and after planting. 3, That in making a plantation, if the depth of the soil will permit, it should be trenched to the depth of two or three spits, keeping in mind what was said on trenching last week. 4, That in trenching a good supply of manure, not more than half decomposed—say a thickness of from 8 to 12 inches—should be used, and that not turned in in layers, but intimately mingled with the soil as the work proceeds. 5, In addition to this, when the surface is nicely aired and levelled, a little leaf mould or very rotten dung may be spread on the surface when planting, so as to encourage vigorous growth at once. 6, The best time for planting is as soon as the strong-rooted runners can be obtained, whether by layering in pots or other means; the next best will be as soon after that as possible. In all small gardens there is often a difficulty in sparing fresh ground so early in the season, and where that is the case the best plan is to prepare a border or piece of ground by well stirring it, but not too deeply, and enriching it well with leaf mould and rotten dung, and inserting the runners in it, as soon as they show roots, at from 4 to 5 inches apart. Here they can easily get a little shading if necessary, and watering, and they will grow fast and strong, and may either be lifted with fine balls in the autumn, or as soon as the ground is in good order in the spring. When so done, as well as when planted out early, they will fruit the first season. We always adopt this plan to have a reserve in hand for forcing when those in pots might be exhausted too soon; and though it would not do for early crops, it does very well for a succession or two before Strawberries come in out of doors. 7, When a plantation is thus made, with the exception of a little surface-stirring and manure, surface-mulching as referred to

above, no spade is ever seen near the Strawberries until they are dug down to make way for other succession crops. This is generally after the third season, and sometimes after the second season, especially after forced plants have been used instead of young plants. In general the ground will be managed more profitably if the crop does not stand after the third season. In many amateurs' gardens, however, there is a favourite corner devoted to Strawberries, and the owners do not wish to change it too soon, or they have a terror of the trouble of making a new plantation, and what they are pleased to consider the uncertainties, instead of what we would deem the certainties of success; so that instead of doing anything in the way of a new plantation, they would be glad to do anything and everything to obtain a fair crop from their old plants, or, at least, from plants on the same ground. There are various modes by which such an object may be gained. We will instance two modes: First, where the same ground is to be used, but fresh plants. The plants at first were put in rows 2 feet apart from row to row. These bore from two to three years. The space between the rows was then stirred up and well covered with short dung, leaf mould, and a little lime dust. The runners were encouraged to root into this, were thinned out where too thick, and when well taken the old rows were trenched down and manure added. The process ultimately was repeated whenever the crops were taken. The proceeds were all that could be wished, and we were informed that in one place the same ground had produced Strawberries for nearly twenty years. The second mode is keeping to the old plants, and this we have often practised. In clearing away the runners as soon as possible, a number of the smaller stems with the weakest buds were also removed, so that light and air should tell as powerfully on the old shoots as on younger plants. The ground was then slightly surface-stirred, and surface-dressed with manure. We recollect one instance of a fine crop, and the old gardener told us it was the fifteenth he had obtained from the same plants, and the above was chiefly his plan of working. We forget now the peculiar reason why these plants should be kept as long as they would bear. With manure-dressings, soot-dressings, manure-waterings, &c., which these plants received, along with the thinning of the buds on the old crowns, we see nothing to prevent Strawberry plants lasting scores of years; but unless for particular purposes, desires, and for convenience, we should see no benefit in such a system, as a part of the garden at least would be deprived of all the advantages of a rotation of crops. 8. We see there is one more complaint we have not alluded to. "Our ground is light, Strawberry plants grow well, and bloom well, but we scarcely get any fruit." Make your ground firm this spring by treading, even if you should add some more earth between the rows. Mulch well with rotten dung to give nourishment and keep in moisture, and when the plants are coming into bloom if you do not have a heavy drenching from the atmosphere, give the rows a good soaking of soft water, and if not too strong, if the water comes from the drainage of a dung-hill, house sewage, &c., so much the better. If before the natural waterings from heavy rain, or the artificial waterings you give, you strew the ground with soot and lime, the plants will be still more benefited, and worms and slugs will not be so apt to disfigure or make holes in the fruit. Follow the above plan, and we shall be surprised if instead of having no Strawberries for yourself, you will not be able to have the pleasure of sending baskets and punnets to those who have no chance of growing this valuable fruit.

ORNAMENTAL DEPARTMENT.

Much the same, as respects routine, as last week; but chiefly engaged on fine days in looking after all small bedding plants, giving abundance of air, and removing all traces of damp. In some cold pits and frames put some dry charred rubbish at the bottom for the pots to stand upon, and moved some of the more tender into places, where, if necessary, a little dry heat could be given. Gave a little fire heat to the conservatory and other places several times during the day, that by giving more air there might be a greater drying circulation. Gave no water to plants in cold frames or pits, except when absolutely necessary, as if frost should come the drier the herbage, and the soil too if just moist enough, the less will they be likely to suffer. The

earth pits and frames now being emptied of the decomposed manure, will be filled with fermenting material for forwarding many things.—B. F.

COVENT GARDEN MARKET.—DEC. 19.

We have to report a plentiful supply of all kinds of produce in season, and a full attendance of buyers. Good dessert Pears are rather scarce from preparations being made for Christmas. Of Potatoes the supply continues to be heavy. The various avenues to the market are now beginning to be blocked up by primitive-looking waggons bearing loads of Holly, Laurels, and other evergreens, which meet with a ready sale. Christmas trees, which have now become "an institution," are everywhere seen. Cut flowers are now more plentiful, and mainly consist of Camellias, especially the white, Roses, Violets, Chrysanthemums, Anemones, Christmas Roses, and numerous pots of the beautiful Poinsettia pulcherrima are also met with.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	1	6 to 4	0				
Apricots.....	doz.		0	0	0				
Pigs.....	doz.		0	0	0				
Filberts & Nuts 100 lbs.	60		0	90	0				
Grapes, Hothouse...lb.	5	0	8	0					
Foreign.....	1	0	2	0					
Muscats.....	6	0	10	0					
Lemons.....100	6	0	10	0					
Melons.....	each	3	0	5	0				
Mulberries.....	quart	0	0	0	0				
Nectarines.....	doz.	0	0	0	0				
Oranges.....	100	4	0	10	0				
Peaches.....	doz.	0	0	0	0				
Pears.....	bush.	8	0	12	0				
dessert.....	½ sieve	2	6	6	0				
Pine Apples.....	lb.	3	0	6	6				
Pomegranates.....	each	0	3	0	0				
Walnuts.....	bush.	14	6	20	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus.....	bundle	6	0	10	0				
Beans, Broad.....	bush.	0	0	0	0				
Kidney.....	100	3	6	5	0				
Beet, Red.....	doz.	1	0	1	6				
Broccoli.....	bundle	0	9	2	0				
Brussels Sprouts.....	sieve	1	6	2	6				
Cabbage.....	doz.	0	9	1	3				
Capicums.....	100	1	3	2	0				
Carrots.....	bunch	0	6	0	8				
Cauliflower.....	doz.	2	6	4	0				
Celery.....	bundle	1	6	2	0				
Cucumbers.....	each	0	9	2	6				
Endive.....	score	1	3	2	6				
Fennel.....	bunch	0	8	0	0				
Garlic and Shallots, lb.	0	8	0	0					
Herbs.....	bunch	0	3	0	0				
Horseradish... bundle	1	6	4	0					
Leeks.....	bunch	0	3	0	0				
Lettuce.....	score	1	0	2	0				
Mushrooms.....	pottle	1	0	1	6				
Must. & Cress, punnet	0	2	0	0					
Onions.....	bushel	2	0	4	0				
pickling.....	quart	0	6	0	8				
Parley.....	bunch	0	3	0	4				
Parasnips.....	doz.	0	6	0	9				
Peas.....	bush.	0	0	0	0				
Potatoes.....	sack	5	0	8	0				
Radiates doz. bunches	1	6	2	6					
Rhubarb.....	bundle	1	0	0	0				
Savoy.....	per doz.	0	9	1	6				
Sea-kale.....	basket	1	6	2	6				
Spinach.....	sieve	1	6	2	6				
Tomatoes.....	½ sieve	0	0	0	0				
Turnips.....	bunch	0	3	0	0				

TRADE CATALOGUES RECEIVED.

Drummond & Sons, Stirling, and 58, Dawson Street, Dublin.—*Catalogue of Forest, Ornamental, and Fruit Trees, Roses, Shrubs, Conifers, &c.*

Edward, George, Clarence Nurseries, and 1, King Street, Castlegate, York.—*Catalogue of Fruit Trees, Roses, Pelargoniums, Carnations, &c.*

Sutton & Sons, Reading.—*Spring Catalogue, and Amateurs' Guide for 1864*, containing lists of Vegetable, Flower and Agricultural Seeds, Grasses, and Plants, with cultural instructions.

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

PESTSTEMONS (B. H.).—*Purple*: Violet, Goliath, Mon Caprice, Orientale, Mrs. Lees, Kellerman, John Fogg, Monsieur de Forpart, Jaffrayanum, Azures Verticillata, Clio, and Blue Beauty. The above vary in colour, from light blue to lilac and crimson purple. *Scarlet*: Vivid, Nobile, Rose of England, Rubrum Magnificum, Meteor, Illuminator, Mrs. Stearns, Robert Hight, Amabilis, Cocineum Magnificum, Brilliant, and Comte de Lambertye. We are not acquainted with any white, beyond Alba. Mrs. Hope, a light peach, with a white throat, pencilled with light crimson, is a good light-coloured flower. Many of the above have the throat white. The Arbutus is chiefly raised from seed; it may, however, be increased by layers. Evergreen Oaks are increased by sowing the acorns in March or April, and by grafting. Evergreen shrubs are propagated by cuttings made like any other description of cutting, and generally inserted early in autumn.

PEARS FOR AN EAST AND NORTH-EAST WALL (J. W. L. S.).—These will do well at Teddington—Glen Moreau, Knight's Monarch, Winter Nellie, Josephine de Malines, Henriette Bonvier, Zéphirin Grégoire, Jean de Witte, Red Vest, Bergamotte Eperun, Ne plus Meuris, Huxley's Prince of Wales (or Huxley's Bergamotte), Huxley's Victoria.

REMOVING SUCKERS FROM HYACINTHS (*E. S., Hampton*).—We make it a practice to take off the suckers when we pot the bulbs. If any appear afterwards we take them off with a knife close to the bulb, taking care not to injure the latter nor its roots. Offsets do nothing but rob the parent, and are best removed. You will apply this to your bulbs.

CHRYSTANTHEMUMS DONE BLOOMING (*Idem*).—Take away all the wood of the current year and turn the plants out of the pots, and plant in the open border. You may select the strongest of the suckers and pot them singly now. They should be headed or topped when 6 inches high—that is, if you wish to grow them on single stems; if you do not care about that, stop them now to obtain dwarfs or bushy plants. These will make earlier-blooming and larger plants than if you deferred parting the plants till March or April. If you part them now, the young plants will require to be wintered in a cold frame. Those divided in spring will do without that protection.

ESTABLISHING GRASS WALKS (*R. E.*).—We advise you to sod the intervening spaces between the beds, and think yourself well off that you have turves at command. You may sow lawn grass seeds in March as you propose, but you must not expect so good an effect as if the spaces were soded at once. In neither way would the grass be injured by treading in the ordinary course of proceeding, and in both it will be improved by rolling twice a week.

PLANTS FOR ENCLOSED N.W. WINDOW (*A. G. H.*).—The plants best adapted for such an aspect are Ferns; but we know of no climbers that would do well in their company except varieties of Ivy, some of which have highly ornamental foliage. *Lygodium scandens* and *L. palmatum* are climbing Ferns, and would, no doubt, do well in such a place. The roof should slope towards the front, and it will not matter if it be slate if Ferns are grown, but glass would be better. If you are not particular as to Ferns the window might be planted with *Hyacinths*, *Cyclamens*, *Tulips*, *Narcissus*, and other spring-blooming plants, which would be charming in early spring; and in summer the bed might be filled with *Geraniums* and *Fuchsias*, with *Tropeoliums*, *Bouvardias*, and *Lophospermums* running up strings fastened to the roof, and about 6 inches from the window.

LIGHT CHALKY-SOILED FLOWER-BORDER (*Torridus*).—A dressing of salt as you propose will in some measure check the evaporation of moisture and scorching up of your plants in summer; but you require a more permanent and more effectual remedy. Can you not obtain earth from the parings of ditches, &c., so as to deepen the soil to 18 inches and improve its staple at the same time? Your "very shallow chalky soil" is worse even than a very clayey one for garden purposes. We should increase the depth and staple as we have said, and mulch the surface at least an inch thick in summer with cooco-nut fibre refuse.

AMERICAN BLIGHT (*A. Q.*).—We have used Gishurst compound at the rate of 8 ozs. to the gallon of water, and find it kills this pest. We apply it with a brush, rubbing or brushing it into cracks, holes, or crevices, and heated to 160°. Now is the time to apply it. It does not injure the buds unless the scales are rubbed off them, when the rubbing kills the buds quite as much as the compound. We have also found the following answer well:—Sulphur, lime, and soot in equal quantities formed into the consistency of thin paint by the addition of boiling urine, and this we apply to the trunks with a brush, rubbing it well into the crevices when cooled to 140°. The soil should be taken from about the main roots, and, if infested, these should be painted like the stems.

STOVE IN GREENHOUSE (*E. M. W.*).—Providing the fumes of the charcoal or coke can be made to pass into the tin pipe, we see no danger but what may arise from dryness. With the assistance of the blinds your stove should be sufficient to keep frost out. We advise you if you can burn coke in your stove to employ it, and if it emits a sulphurous smell you must make an alteration, as it will then be evident that the fumes which ought to ascend the tin pipe pass into the house, and these sulphurous fumes soon destroy vegetable life. Charcoal, on the other hand, when burning emits no offensive fumes that are appreciable to the senses, and therefore you must be cautious about it, for, should the gases escape from the greenhouse into a sleeping-room, it is possible the fumes might suffocate the inmates. Charcoal fumes also destroy vegetable life. Guano water made by dissolving 1 oz. in a gallon of water may safely be given to plants in a growing state. It is as good, if not preferable, to manure water, and can be applied more safely by an amateur.

VINES FORCING (*Liverpool*).—We fear you will not be able to grow Ferns and Vines successfully together. You might bring the Vines on until April in your fernery, when the fernery would require shading and the Vines removing to a house with more light and heat. We do not think there is any chance of your being able to grow Vines and Ferns together, but if you have other convenience besides the Fern-house, which would favour the removal of the Vines at the time above named, we advise you to have the Vines pruned at the time above named, we advise you to have the Vines pruned at once and to seal the cuts with a red-hot iron and then seal the wounds or cuts with sealing-wax. The Vines should then be placed in the coolest part of the Fern-house until the buds break, when they cannot have too much light nor would the heat of your fernery be too much for them. Top-dress, but do not repot, and grow on in the fernery until the Grapes change for ripening, and then remove to a drier house to ripen. There is no better work than "Sanders on the Vine." It can be had from our office, free by post, for 5s. 2d.

STOPPING GERANIUMS (*A Subscriber*).—After this we would not stop *Geraniums* which were wanted to bloom early—say in April and May. For later blooming they may be stopped freely, especially all the stronger shoots. If these are freely stopped a shoot will come from the axil of most of the leaves left. Pretty close pruning in autumn and this stopping are the best means for securing bushy plants. This matter, often dwelt upon, may again be more fully referred to. The great object now is to prevent a few shoots stealing away the strength. For instance: suppose a good-sized plant has a dozen shoots, and three of these have more than double the strength of the other nine, then, if the three are pinched, they will each throw out two or three shoots, which will soon be as strong as the nine, and thus the strength is equalised.

COMPOST OF LIME AND MOULD TO GRASS LAND (*Catowbiense*).—You may apply this as soon in the autumn as the grass ceases growing and there is little left for the cattle to feed on, as it would be wasted by the dressing. Heavy loads would certainly be a good dressing for a Scots acre, but if laid on now we do not think it would kill any part of the grass. If laid on early in autumn, and the lumps exposed to frost to mellow them, it will all help the grass, and the lumps having been broken by the rain, it will all help the grass.

CALCEOLARIA VIOLACEA (*J. G., Whitefield*).—We think the plants are as that can be wished. They will be quite warm enough in a greenhouse the is seldom below 40°, and from which frost is excluded. Keep the plants in an airy position all the winter. Do not allow them to flag from dryness; but so long as the leaves keep fresh and firm, let the soil be dry rather than wet until the flower-trusses begin to show, and then water more liberally. We shall be much surprised if your strong plants will not be in sheet of bloom in April, May, and onwards. When done flowering the plants may be freely cut in, and when pushing freely be re-potted in smaller pots by getting rid of a portion of the old soil. Cuttings taken off in summer or spring make, however, the best plants. Those rooted early in spring will bloom freely the following year. Perhaps your plants have been kept rather vigorous. Let us know if your plants are not first-rate in April and May.

SPRINGING TREES OUT-DOORS AFTER DRESSING THEM (*N.*).—If you have dressed the trees with a mixture of Gishurst compound and water in the proportion of 1 lb. to the gallon, we should not by any means advise the syringe to be used until some growth takes place—say in the end of April or May. The object of dressing at this season with so strong a mixture is to kill all insects or their larvae that may be lurking in the bark or about the tree, and to follow this up with a syringing of clear water would be simply to remove so much of the former as to render it less likely to perform the duties expected of it.

IRON DAHLIA-STAKE RUSTING IN THE GROUND (*Catowbiense*).—We should advise the lower part of your stake to be held in the fire a short time to burn off the rust, after which coat that part, especially that which is at the surface of the ground, with creosote or coal tar to which a little grease or oil has been added, and the whole made warm. The remainder of the stake we should advise to be painted a lead colour, which is both durable and, in our opinion, looks better than green, the last-named colour being, perhaps, the very worst for lasting. We are not in general advocates for iron Dahlia-stakes. Wooden stakes, to our mind, look better; but where the former exist painting must be resorted to, and in doing so our aim has been to obtain a quiet unassuming colour and to avoid both white and green in the attempt.

CONSTRUCTION OF A GREENHOUSE-VINERY (*A Six-years Subscriber, Hamersmith*).—We do not clearly understand your description, especially as to the height of the proposed glass case and the height of the floor of the said case above the level of the outside ground, or the mode of communicating with the proposed house except the window of the dining-room is made into a door, or how to get to the garden in front except by another door, and steps leading down to it. Besides, you seem resolved to make such a very superior thing of it, that you would require to think the matter over carefully and have an estimate from a builder in your neighbourhood as to the expense. 1st. It is such a complicated affair; and as without great trouble you must have some fastenings to the walls and posts in the ground, and yet you wish the whole to be portable, we would say advisedly, do nothing whatever without a clear understanding with your landlord, and also a simple written agreement—there are so many quirks in the law in these matters. A farmer has lately put up a large glass house at the end of his farm-house, thinking he could move it when he liked; but there can be no doubt, from the way it is built, that the landlord can claim it if he chooses. A curate put up a small house at the back of his residence, and that he can move, as it is built in pieces and has merely blocks of wood for a foundation; but being a lean-to, a ridge-board was screwed to the wall just under the upper-floor windows. To this the rafters were screwed by one end, and fastened to the plate in front. By unscrewing from this plate, which could be left, the whole house could be moved easily, without even leaving a hole in the ground to fill up. A little nice sand did for the paths outside, and the whole being wood and glass there was no difficulty in lifting and moving the same, you would require a strong framework to support the floor of the house, as well as the house itself. 2nd. This secured, there would be no difficulty in planting the Vines on the lower level, growing them as long as possible; and as soon as they are long enough to get up to the house, disband all the stems, and cover them with a narrow wooden box packed with sawdust. They would do admirably in the wide part of the house, and might be trained longitudinally in the narrow part and thus give a nice shade there. The best sorts of Vines would be one Buckland Sweetwater, two Black Hamburgs, and one Muscat Hamburg. 3rd. These would do well even without the stove, but would do better with it; and were there no opposition you could heat the place easily from the kitchen boiler. The artificial heat would be all the more necessary from the very warmth of the place, as things will be apt to be excited by the heat, and will therefore suffer more easily and readily from cold. 4th. The Hartley's patent will be the best, but it will be more expensive, and for 21 oz. the sash-bars must be strong. The front glass might be common plate, and that you could easily shade. The shelves, if lined with zinc as you propose, will be all the better; and if the floor is made of well-seasoned timber, well rabbeted, it will be sufficient. The syringing will do it little harm as it will soon dry, and a little dust and washing will fill the seams. 5th. With so many things to consider, it would be impossible to give such an estimate of expense as would come anything so near as you might obtain from a glass-house builder in your own neighbourhood, or at Chelsea. We have frequently stated what such buildings have cost; but with every desire to oblige our readers, the giving estimates for supposed circumstances would be as thoroughly impossible as planting the numerous flower gardens submitted to us. We may assist, give opinions, and criticise; but we cannot do more.

BOOKS (*H. B. L.*).—There is no such periodical as an illustrated *Florest* published weekly, nor any other so published on gardening, except this *Journal*, which has illustrations. Mr. Hereman's book relates chiefly to the culture of fruits under Sir J. Paxton's form of glass houses. It is to be had at Mr. Hereman's office in Pall Mall.

PELARGONIUMS, CAMELLIAS, AND ASALEAS (*J. P.*).—The following are the names of twelve *Pelargoniums*, cheap and good:—*Carlos*, *Lord Clyde*, *Lady Taunton*, *Patroness*, *The Belle*, *Conspicuum*, *Mrs. Hoyle*, *Roseum*, *Lady Canning*, *Celeste*, *Norma*, and *Leviathan*. *Camellias*: *Old Double White*, *Fimbriata*, *Imbricata*, *Candidissima*, *Duchess of Orleans*. *Asaleas*: *Sir C. Napier*, *Stanleyana*, *Gleditsioides*, *Variegata*, *Iveryana*, *India alba*, *Optima*. We never recommend tradesmen. Look into our advertising columns.

ZONALS, OR HORSESHOE GERANIUMS (*S. O. U.*).—*Geraniums* having a black band on the upper surface of their leaves are so called. *Tom Thumb*, *Commander-in-Chief*, and *Ribwortow* are examples, but not much

THE SMALL GARDEN AT TRENTHAM (F. E. M.).—To lay down the figure, of which we gave a representation at page 394, the space enclosed between the Privet hedge should be a blunt oval, the diameters of which would be 80 feet and 74. Then the central oval would be 18 feet by 14, all the rest of the figures round it may be curved lines next the oval as in the heart-shaped figures 3, and the paths between them and the oval 5 feet all round—the same width being allowed for the path on the outside of these figures. The pathways between these beds, as between 3 and 8, 6, would be about 3 feet wide; the four heart-shaped figures would be 14 feet by 10 at greatest width; the four circles would be 7 feet in diameter. If your ground were only half the size—40 feet by 37—the figures and walks would just be half the size, the centre 9 by 7, and the hearts 7 by 5. The two circular walks would be 2½ feet and the inner ones 1½ foot wide. A piece of ground, 84 feet by 50, would be two-thirds of the size first spoken of, and would look very well. It would be more easily laid down if the centre were a circle instead of an oval. Thus, fix on the centre, describe the circle, and run a line round for the outside of the eight figures. Place two lines across the centre at right angles with each other, so that the four ends shall come in the centre of the four path openings into the garden, and this will give you the four points of the heart-shaped figures. Place other two strings diagonally at equal distances from these right-angled lines, and on these fix the centre for the smaller circles. The figure will then make itself. We have great pleasure in answering this because there has been so much trouble taken in giving the references. Let us add that if the plan is followed strictly—Privet hedge round the outside and all—that hedge should be proportioned in height and width to the size of the figure. At half the size first spoken of the height should not be more than 8 inches.

CHRYSANTHEMUMS FOR EXHIBITION (Gallier).—We hardly understand what you want, and you seem to be in the best way to get rid of your difficulties; but, if you want our opinion, we say decidedly that Chrysanthemums ought clearly to be shown on one stem. We think, too, that the more naturally they are grown the better. Some staking must be used, but it ought to be as little as possible and to be concealed as much as can be.

PLANT-CASE HEATING (Sigma).—Heated by hot water, the only mode of raising the temperature of the interior above 60° is by having some part of the floor uncovered by earth, so as to allow the heat to rise more freely. We employ a plant-case heated beneath the soil by Child's night lights, or rather kept from getting too cold; and at night we put a woollen cover over the glass. We know nothing about the book you name.

VIOLETS NOT BLOOMING (J. L.).—A free and rich soil, with shade or a deficiency of light and air, will produce the superabundance of leaves you complain of. Too moist and warm an atmosphere produces the same result. At this season no more water should be given than just sufficient to prevent flagging; and if they have abundance of air, and be placed on a shelf near the glass—for we presume they are in pots or in a frame—we should think they would flower. A moderately rich and rather light loamy soil, with perfect drainage, suits the Violet well. In the absence of particulars, we are unable to reply fully to your query. Inquirers would be doing themselves a kindness by giving more details.

STOVE PLANTS BLOOMING IN EACH MONTH (A. S. S.).—*January:* *Apheleandra cristata*, *Epiphyllum truncatum* (vars.), *Eranthemum pulchellum*, *Gardenia eltioides*, *Hebeclinium atrovirens*, and *Euphorbia jacquiniflora*. *February:* *Fraxinella confertiflora*, *Vriesea splendens*, *Thyracanthus rutilans*, *Euphorbia splendens* major, *Stenogaster concinna*, *Pycnostachys urticifolia*. *March:* *Imantophyllum miniatum*, *Fraxinella eximia*, *F. angusta*, *Gardenia radicans* major, *G. florida*, and *Cyrtanthera magnifica*. *April:* *Centradenia floribunda*, *Ardisia crenulata*, *Gesnera macrantha* purpurea, *Thunbergia Harrisonii*, *Hibiscus roseus grandiflorus*, and *Hoya carnea*. *May:* *Myrsine pulchra*, *E. splendens*, *Gloxinia* (vars.), *Stephanotis floribunda*, *Medinilla magnifica*, and *Streptocarpus*. *June:* *Meyenia erecta*, *M. erecta* alba, *Ixora coccinea*, *Jasminum dianthiflorum*, *Hoya bella*, and *Combretum purpureum*. *July:* *Cyrtoceras reflexum*, *Rondeletia speciosa* major, *Achimenes* (vars.), *Allamanda cathartica*, *A. Aubletii*, *Ixora aurantiaca*, and *Dipladenia crassifolia*. *August:* *Clerodendron falax*, *C. Thomsonii*, *Echites splendens*, *Allamanda nerifolia*, *A. grandiflora*, and *A. Schottii*. *September:* *Ixora Rollinsonii*, *I. crocata*, *Torenia asiatica*, *Vinca rosea*, *V. ocellata*, and *Plumbago capensis*. *October:* *Impatiens*, *Jerdonia*, *Gesnera sebrina* splendens, *Beloperone violacea*, *Begonia fuchsioides* acuminata, *B. incarnata*, and *Polanthes pulcherrima*. *November:* *Bilbergia thyracoides*, *Torenia pulcherrima*, *Begonia splendens*, *Monochætum ensiferum*, *Euella macrophylla*, and *Begonia Prestonensis*. *December:* *Gesnera cinnabarina* Ignes, *C. refulgens*, *Stephanopyrum Baikiei*, *Koleria lanata*, *Apheleandra aurantiaca*, and *Echites Miltonii*. We think "Flower Gardening for the Many" and "Florists' Flowers for the Many" would suit you. You can have them free by post from our office for ten postage stamps.

PLERANTHUMS FOR EXHIBITION IN JUNE (Constant Reader).—If, as you say, your plants are growing too fast, you should pinch out the points at once, tie out the shoots well, remove all superfluous foliage from their centres, and place in a light position close to the glass. Keep them cool—not higher than 40° at night—when it is necessary from frost to apply fire heat, and be very sparing with water at the root. Just give them enough to keep them from flagging. These conditions are the most likely to prevent a weak elongation of the tissues of the plants. If they get drawn up, know you will never make exhibition plants of them. As to the time of shifting them, that must depend on their being healthy and well rooted; and for showing in June they ought to be in that condition in the middle or end of January, and should then be shifted, but not into large pots. Eight-inch will be large enough. We prefer giving the last shift early in October. There is then far less chance of too gross a growth, if properly managed through the winter, than when shifted in spring. A rather strong loam, with a third well-rotted cowdung, and a little sand, will grow first-class Geraniums and weak guano water should be applied when the bloom-buds exhibit themselves, and left off when they begin to open.

NAMES OF PLANTS (Alfred).—1 and 2, not known; 3, *Justicia speciosa*; 4, *Thyracanthus rutilans*; 5, *Salvia involucrata*; 6, *Pteris cretica*. (H. Smith).—It is impossible to name such specimens with any degree of confidence. 1, is some *Primula* allied to *P. auricula*; 2, may perhaps be a *Solidago*; 3, *Stachys lanata*; 4, *Pulmonaria officinalis*. (J. H. Bailey).—*Asplenium lineolatum*. (J. M.).—*Phytanthes albens*. (W. H.).—Your *Mosses* are—1, *Blechnum frutescens*; 2, *Hypnum undulatum*; 3, *Dicranum majus*; 4, *Hypnum proliferum*. (Nomenclature).—Your plant is unrecognised by any of the authorities to whom we have shown it. It may be a *Gnaphalium* or it may be an *Antennaria*, but we cannot determine unless

we see some of its flowers. We think your plant is grown in gardens under the name of *Gnaphalium lanatum*. (J. McEoy).—1, *Lastrea tenericulis*; 2, *Pleopeltis Billardieri*; 3, *Adiantum pubescens*. (A Constant Reader, Dublin).—Your trailing plant is *Dianandra prostrata*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

MR. HINDSON'S GAME FOWLS AT THE BIRMINGHAM SHOW.

As a matter of common justice I must call upon you to correct a statement which appeared in your paper of the 8th, impugning my character as Judge at the Birmingham Show.

For some years I have had Game fowls on a walk in the neighbourhood of Welshpool; and a short time since the person in charge desired permission to lend some of my birds to a Mr. Williams, a resident in or near Welshpool, a request with which I promptly and peremptorily declined to comply.

Imagine, then, my astonishment when, in my capacity of Judge at Birmingham, I discovered from peculiar marks (but not until after the prizes had been awarded) that the birds in question, exhibited by Mr. Williams, were my own property. I at once communicated the circumstance to my colleagues, and insisted that the birds be disqualified. This fact can be vouched for by the members of the Council. I am too well aware of the responsibility attached to my position, and place too high a value on my good name, to countenance any such imposition as that attempted; and if I can find means of punishing the principal in this disgraceful act, rely upon it he shall not escape scatheless. His situation in life should have made him above such a scandalous action. By inserting the above in your next you will oblige.—JOSEPH HINDSON, Barton House, Everton, near Liverpool.

Owing to absence from home, I have only just seen your Journal of December the 8th, in which are some remarks on certain Game prizes awarded at Birmingham to a Mr. Williams, of Welshpool, and which were subsequently cancelled. From information I possess, as Mr. Hindson's colleague, I am convinced that the imputation cast upon him in reference to these prizes is entirely unfounded, and had the real circumstances of the case been known to you, I believe the remarks which induce me to address you would not have appeared in your columns.

It is perfectly true that some of the Game fowls to which prizes were awarded belong to Mr. Hindson, but it is not true to assert or insinuate that they were sent to Birmingham with his knowledge or connivance. Of this no better proof is needed than the conduct of Mr. Hindson himself, for it was entirely upon information spontaneously furnished by him, and on his express demand, that the prizes were cancelled.

It will, perhaps, be asked, Why, then, were these prizes awarded? The answer is, that the facts which induced the Judges to disqualify the pens were not ascertained with sufficient certainty until a catalogue was referred to after the awards were closed, and the discovery made that the exhibitor was a person living at Welshpool, where Mr. Hindson's fowls are kept.

Apart from the reasons which induced us to disqualify the pens, I think there can be no question that they were entitled to the position in which they were placed; at any rate, on this point I willingly assume the entire responsibility.

What explanation Mr. Williams, the exhibitor, may be able to offer I have no means of knowing; but the conduct of Mr. Hindson convinced me that he was clear of all complicity in the matter, and that the presence of these fowls at Birmingham was an extreme annoyance to him. No one under the circumstances could have acted in a more open, frank, and honourable manner than he did, and this I am confident would be the testimony of every one with whom he communicated on the subject at Birmingham. I regret the necessity of asking you to publish this letter; but as Mr. Hindson's colleague, it would be ungenerous in me to

pass unnoticed an imputation on his character which I believe to be unmerited.—J. H. SMITH.

[Most readily do we insert the preceding communications, and hope they will prove satisfactory to our readers. We have no other object in vituperating apparent delinquencies than to secure a fair field to all competitors, nor do we censure before we have obtained what we consider reliable information. It is unfortunate that Mr. Hindson did not announce his discovery that the birds were his own until after one of the public had detected the fact; and there is one point on which neither Mr. Hindson nor Mr. Smith has afforded any information, and on which it is certainly desirable. It would be an answer to this question now before us:—"Who is Mr. Williams, of Spring Bank, near Welshpool? is he really an Esquire? I ask this because it was said to be the name of a man under Mr. Hindson's control."—Eds. J. of H.]

CAPTAIN HEATON AND THE BIRMINGHAM SHOW.

I HAVE read with some interest the remarks of your correspondents lately on "Poultry Shows and Judges," I am sorry that two or three cases have occurred recently, which show that those communications are not uncalled for. I allude to the recent occurrences at Birmingham and Leeds, which you have most judiciously treated, as I think, by making public the names of the offenders. With such cases as Mr. Hindson's and Mr. Frederick Hardy's, there cannot be any diversity of opinion.

In the matter of Captain Heaton there is not any suspicion of dishonesty; but there is a breach of rule and a want of fairness, of which he must allow me to say he has not in your last paper given a satisfactory account. His letter to "SMALL FRY" is most unsatisfactory. I have nothing to do with the question whether the birds were bred by himself or Mr. Kelleway; so that they were *bona fide* his own property (and of this I have not heard that there is any question), it matters little. Captain Heaton's answer to this is satisfactory enough. The question with which I wish to deal is, that of his unlawful and unfair admission to the Poultry Show at Birmingham, on Saturday, the 28th of November last.

I have before me the regulations and the programme of the Meeting, from which I quote the following:—

"17. No members of the Society, or of the Council, or other person will be admitted to Bingley Hall before the opening of the Exhibition, on Monday, November 30th, with the exception of those who are actually engaged in the arrangements within the building. Special cards of admission will be forwarded to the Judges to be used on Saturday, November 28th."

"The exhibitors and the public will be admitted to Bingley Hall to witness the judging of the cattle, sheep, pigs, roots, and corn (but not the poultry), on Saturday, November 28th, at 9 o'clock A.M., upon payment of 10s. each."

Now, these statements either mean what they put forth or they are worthless. If the former, Captain Heaton must know this meaning as well as I do, and, therefore, with knowledge he broke one of the regulations of the Show. If the latter, the sooner the Birmingham Show comes to an end the better for the unwary.

Who were the many others followed by Captain Heaton and Mr. Kelleway? If they were persons who, as in the case of these exhibitors, had not any business there, why did not Captain Heaton at once inform the Secretary or other chief in authority, and cause those persons to be removed? Captain Heaton must have known very well that the persons he followed were improperly admitted, and, therefore, he cannot escape the charge that he unfairly took advantage of an opportunity, a charge which in his case becomes serious as the winner of the two silver cups. I do not wish it to be understood for a moment that I question the justness of the award, or the worth of Captain Heaton's birds; but a man must accept the consequences of the situations in which he may place himself. The only way in which shows and exhibitors can thrive is by strict observance of rules. There cannot be any doubt but that Captain Heaton, by his own admission, broke a rule, and took an unfair

advantage over more scrupulous exhibitors, which was most reprehensible, even though he did not use it for his own gain.

Captain Heaton wisely leaves the defence of the Birmingham Committee in their own hands; but it will want very ready hands indeed to afford the Committee a defence at all. The acts of their servants are their own. They are bound to offer some explanation, as what is mis-called "dignified silence" may be misconstrued. Rules must be rigidly kept by Committees and by exhibitors. It will not do to plead mistakes of this kind on the one hand, or following the example of many on the other. I hope that in all future show any breach of rule by an exhibitor will be made a disqualification. In this I shall be supported by all honest men.

Captain Heaton will, I am sure, see with myself the importance of the subject, and the necessity of following it up closely by speaking strongly and to the point. He has made a mistake, and I have told him of it. Nevertheless, I much regret any annoyance which I may thereby have caused him.

As I am answering a communication which bears the name of Captain Heaton, I am bound to give my own, which may be found in the Birmingham catalogue.—GEOFFREY MANNING.

IN reply to Captain Heaton's statement in last week's JOURNAL OF HORTICULTURE, permit me first to thank that gentleman for the great anxiety he displays for my especial benefit, but at the same time to remind the Captain he has evaded the question at issue altogether—viz., by what means he and his friend gained admission on the Saturday to the poultry department of the Birmingham Exhibition, in direct defiance of printed regulations?

Certainly your numerous readers would be ill-prepared to receive the excuse, now urged by Capt. Heaton, that he was not aware that "any favour was granted to himself or Mr. Kelleway, we merely followed many others who entered before we did." It is beyond doubt that Capt. Heaton well knew he was thus breaking the Birmingham rules, and the excuse that he did only as others did before him is hardly what might be fairly anticipated from a government officer, and one so well acquainted with military discipline as is Capt. Heaton. It nevertheless reveals a recognition that "lame excuses are better than none," whilst it does not even attempt either to explain how the admission was obtained, or give any reason why the rules were then so flagrantly violated in favour of those exhibitors who chose to pay the high admission fee of ten shillings. There are those individuals who curiously enough suppose that all such admission money was not thrown away; but certainly the provisos of the printed rule expressly debarred even those who actually paid the ten shillings from viewing the poultry on the Saturday; yet it is now openly admitted that Capt. Heaton, Mr. Kelleway and many others, enjoyed this privilege unmolested by any one. Should such things be?

It is only by strict equality of privileges to every exhibitor, that even the Birmingham Show can hope to maintain its past position for integrity of purpose. No rule can be honest if not sound to the core—in short, that does not admit, or exclude, all competitors alike, without favour or affection.

As a conclusion Capt. Heaton hands over all further inquiry into this now unquestionable dereliction of rules to the better hands of the Birmingham Committee. Do let us hope that clean hands, therefore, are the order of the day. Still exhibitors have but little reason for hope in the direction now named, for rumour is everywhere rife that "the matter is to be best met by allowing it to sleep; and then all recollection of it will be blown over before the time arrives for another year's meeting." If this rumour is correct, and really present circumstances look very much like it, pray let the bed be made up for two—viz., the admission of rich exhibitors without right, to the prejudice of the less pecuniarily fortunate; and the unprecedented eccentricities of the Game-judging at Birmingham, in 1883; and then let both (if they can) sleep comfortably together, for they are fitting bedfellows; and possibly their's will be roseate dreams, for

Be it said, without shocking them,
They lie growing asleep while the Council are racking them.

—SWIFT, FRY.

THE NEWPORT, MONMOUTH, POULTRY SHOW.

It really appears as though the multiplicity of poultry shows just now taking place, so far from detracting, only added to the public interest of poultry-culture. Good as have been the previous meetings at Newport, it is unquestionable, even at the most furtive glance, that the poultry this year exhibited far surpasses all former attempts of the kind in South Wales.

A perusal of the prize list will prove that scarcely a single breeder of well-known celebrity was unrepresented at Newport. True it is, the Viscountess Holmesdale took a full "lion's share" of the distinctions—to wit, three first prizes, four second, a third, and three high commendations; still, after so complete a sweep, there will be found on consulting the awards that this lady's triumph was by no means achieved without the most severe competition. The whole classes of *Grey Dorkings* and *Spanish*, as left after the selection of the prize pens, would have been considered beyond an average amount of merit at most poultry shows. This fact speaks volumes in favour of the Newport Show, when it is borne in mind that fifteen pens obtained honourable distinction in these two classes only. The *Game* classes were in no wise inferior; and with such an amount of entries as took place this year, the Managers of this Show will most probably increase the number of *Game* classes to meet the future necessities of the Newport Exhibition, two classes only being a great restriction to varieties so diversified as the *Game* breeds. The *Polands* and *Hamburgs* were better by far than we anticipated; and the *Cochins* and *Brahmas* were also deserving of especial mention.

The *Geese* and *Turkeys* were first-rate, indeed we rarely see better; and the *Duck* classes were well filled with the best of birds.

The collection of *Pigeons* was limited to only forty-three pens, but contained capital specimens, and among them many new varieties.

The Committee were most assiduous in adding all in their power to the comforts of both the poultry and the visitors, and as the weather was good, all things went off prosperously. The whole Show consisted of 371 pens.

SPANISH.—First and Second, Viscountess Holmesdale, Linton Park, Kent. Third, C. Clayford, Sunnyside, Northampton. Highly Commended, H. Lane, Bristol; J. Stevens, Walsall. Commended, J. Stevens, Walsall; Mrs. Blay, Worcester; J. K. Fowler, Aylesbury.

DORKINGS (Coloured).—First and Second, Viscountess Holmesdale, Linton Park. Third, Mrs. Pettat, Basingstoke. Highly Commended, J. Logan, Newport. Commended, Capt. F. T. Parker, Monmouth; J. K. Fowler, Aylesbury; Miss J. Milward, Newton St. Loe, Bristol.

GAME (Any variety except White or Pile).—First, H. Adams, Beverley, Yorkshire. Second, M. Billing, jun., Birmingham. Third, J. H. Brackenridge, Bristol. Highly Commended, J. Heath, Nantwich, Cheshire; J. B. Chune, Coalbrookdale, Shropshire; C. Bulpin, River Side, Bridgewater; J. Llewellyn, Caerphilly, Glamorgan. Commended, A. B. Dyas, Madeley, Shropshire; M. Billing, jun., Birmingham.

GAME (White or Pile).—First, M. Billing, jun., Birmingham. Second, H. Adams, Beverley, Yorkshire. Third, J. Llewellyn, Caerphilly, Glamorgan.

COCHIN-CHINA (Coloured).—First, W. Bradley, Digby Locks, Worcester. Second, J. K. Fowler, Aylesbury. Third, Viscountess Holmesdale, Linton Park. Highly Commended, Viscountess Holmesdale, Linton Park; R. H. Nicholas, Malpas, Newport. Commended, J. Stevens, Walsall; R. H. Nicholas, Malpas, Newport; H. Caldwell, Great Malvern; J. Carr, Hafod, Swansea.

BRAHMA POOTRA.—First and Second, J. Hinton, Hinton, Bath. [Highly Commended, J. K. Fowler, Aylesbury.]

HAMBURGERS (Gold or Silver-pencilled).—First, Viscountess Holmesdale, Linton Park. Second, J. Holland, Worcester. Third, Miss C. Purnell, Pont-Canna, Cardiff. Highly Commended, Miss C. Purnell, Pont-Canna, Cardiff; R. H. Nicholas, Malpas, Newport; Viscountess Holmesdale, Linton Park. Commended, J. B. Chune, Coalbrookdale, Shropshire; T. Fletcher, Great Malvern; C. H. Wakefield, Malvern Wells.

HAMBURGERS (Gold or Silver-spangled).—First, Viscountess Holmesdale, Linton Park. Second, T. Davies, Newport. Third, G. Brook, Huddersfield. Highly Commended, M. Billing, jun., Birmingham; Mrs. Pettat, Basingstoke. Commended, W. Lewis, Pillgwenlly, Newport; T. Davies, Newport; J. B. Chune, Coalbrookdale.

POLANDS (Black with White Crests).—Prize, R. H. Nicholas, Malpas, Newport.

POLANDS (Golden or Silver).—First, J. Heath, Nantwich, Cheshire. Second, R. H. Nicholas, Malpas, Newport. Highly Commended, Mrs. Blay, Worcester. Commended, T. Fletcher, Great Malvern; Mrs. Pettat, Basingstoke.

BANTAMS (Game).—First and Second, T. Davies, Newport. Commended, M. Billing, jun., Birmingham; J. K. Fowler, Aylesbury.

BANTAMS (Any other variety).—First, R. H. Nicholas, Malpas, Newport. Second, Viscountess Holmesdale, Linton Park. Third, E. Cambridge. Highly Commended, W. Bowly, Cirencester; F. H. Phillips, Chippenham, Wilts; G. Williamson, Nantwich, Cheshire; Miss G. Everett, Gibraltar Cottage, Monmouth; J. Maund, Duffryn Mawr, Aberavenny. Commended, K. Jones.

ANY OTHER DISTINCT BREED.—First, R. H. Nicholas, Malpas, Newport (Black Hamburgs). Second, Viscountess Holmesdale, Linton Park (White

Cochins). Third, T. Ashton, Tamworth (White Dorkings). Highly Commended, R. H. Nicholas, Malpas, Newport (Chinese Silkies, Cuckoo Minoras, and Black Hamburgs); F. F. Cother, Salisbury (Pheasant Malays); J. J. Fox, Devizes, Wilts (Malays); J. Carr, Hafod, Swansea (White Cochins); G. Williamson, Nantwich (White Cochins); W. Bowly, Cirencester (Silkies); Master C. A. Baines, Taunton (Malays). Commended, W. Powell, The Gaer, Newport (White Dorkings); Capt. F. T. Parker, Rockfield, Monmouth (White Cochins).

GUINIA FOWLS.—Prize, Sir G. F. E. Walker, Bart., Castletown, Cardiff. Commended, R. H. Nicholas, Malpas, Newport.

DUCKS (Aylesbury).—First, Second, and Third, J. K. Fowler, Aylesbury. Highly Commended, J. Logan, Newport. Commended, E. Shaw, Oswestry, Salop; A. Cuthbertson, Llangibby, Newport.

DUCKS (Rouen).—First, J. K. Fowler, Aylesbury. Second, H. J. Evans, Cardiff. Third, C. Lyne, Brynhyfryd, Newport. Highly Commended, W. Powell, The Gaer, Newport; J. H. Brackenridge, Chew Magna, Bristol. Commended, A. Cuthbertson, Monmouth.

GESE.—First and Second, J. K. Fowler, Aylesbury. Third, A. Cuthbertson, Monmouth. Highly Commended, J. Logan, Newport. Commended, R. Rees, Aberavenny.

TURKEYS.—First, Miss J. Milward, Newton St. Loe, Bristol. Second, Mrs. Horlock, East Vaga, Chesham. Third, Mrs. Lewis, Darnall Hill, Chesham. Highly Commended, H. J. Evans, Cardiff. Commended, J. K. Fowler, Aylesbury; Mrs. Horlock, East Vaga, Chesham.

SWEETSTAKES FOR COCKS.

SPANISH.—First, H. Lane, Bristol. Second, Viscountess Holmesdale, Linton Park. Highly Commended, Viscountess Holmesdale, Linton Park. Commended, T. Davies, Newport; E. Newman, Newport.

DORKINGS.—First, Viscountess Holmesdale, Linton Park. Second, E. Shaw, Oswestry, Salop. Highly Commended, Captain F. T. Parker, Rockfield, Monmouth; W. Bowly, Cirencester. Commended, Viscountess Holmesdale, Linton Park.

GAME.—First, J. B. Chune, Coalbrookdale, Shropshire. Second, R. H. Nicholas, Malpas, Newport. Highly Commended, A. B. Dyas, Madeley, Shropshire.

COCHIN-CHINA.—Prize, Viscountess Holmesdale, Linton Park. Highly Commended, J. Carr, Hafod, Swansea.

GAME BANTAM.—Prize, Miss C. Purnell, Pont-Canna, Cardiff. Highly Commended, T. Davies, Newport.

ANY OTHER VARIETY.—First, W. Lewis, Pillgwenlly. Second, J. Carr, Hafod, Swansea. Highly Commended, Miss C. Purnell, Pont-Canna, Cardiff; T. Davies, Newport; Viscountess Holmesdale, Linton Park.

COTTAGER'S PRIZES.

FOWLS.—First, Second, and Third, W. Jenkins, Malpas, Newport. Fourth, Mrs. E. Ford, Malpas, Newport. Highly Commended, G. F. Winmill, Newport.

DUCKS.—First, E. Hill, Malpas, Newport. Second, D. Hickey, Llanwrn, Newport. Third, W. Pillinger, Malpas, Newport. Fourth, G. Roundy, Malpas, Newport.

PIGEONS.—Carriers.—First, J. W. Edge, Aston, Birmingham. Second, C. Bulpin, River Side, Bridgewater. Commended, C. D. Phillips, Newport.

Powders.—First, C. Bulpin, Bridgewater. Second, M. E. Jobling, Barras Bridge, Newcastle-on-Tyne. Commended, M. E. Jobling, Newcastle-on-Tyne.

Tumbler.—First, H. Yardley, Birmingham. Second, J. W. Edge, Aston, Birmingham.

Fantails.—First, J. W. Edge, Aston, Birmingham. Second, T. Roe, Newport. Highly Commended, A. Heath, Calne, Wilts. Commended, Miss J. Milward, Newton St. Loe, Bristol.

Any other variety.—First, H. Yardley, Birmingham. Second, M. E. Jobling, Newcastle-on-Tyne. Third, A. Heath, Calne. Highly Commended, C. Bulpin, Bridgewater.

Edward Hewitt, Esq., of Sparkbrook, Birmingham, judged the poultry; and Dr. Cottle, of Cheltenham, awarded the Pigeon prizes; both these gentlemen expressing themselves gratified at the high quality of the birds exhibited.

ROYAL DUBLIN SOCIETY'S POULTRY SHOW.

DECEMBER 15TH.

THE following were the awards:—

BRAHMA POOTRA.—Prize, Mrs. F. Blair, Balthayock Castle, Inchmartine, Leathen. *Chickens.*—First and Second, Mrs. F. Blair.

DORKING.—First and Second, Mrs. F. Blair, Balthayock Castle. Highly Commended, R. P. Williams, Hollybrook; A. Warburton, Kill, Ness. Commended, Mrs. F. Blair. *Chickens.*—First, G. Langtry, Malahide. Second, R. P. Williams. Highly Commended, Lord J. Butler, Drumcondra Castle; J. J. Lafarelle, Sullorgan; J. Hutchinson, Christ-Church Place. Commended, R. P. Williams; E. W. Boyle, Dundrum.

SPANISH.—First, E. W. Boyle, Dundrum. Second, Miss E. de C. Drevier, Rose Hill, Blackrock. Commended, R. P. Williams, Hollybrook, Clontarf. *Chickens.*—First, Second, and Commended, R. W. Boyle.

COCHIN-CHINA.—First and Second, Mrs. F. Blair, Balthayock Castle. Highly Commended, E. W. Boyle, Dundrum. *Chickens.*—First, R. P. Williams, Hollybrook. Second, Mrs. F. Blair. Highly Commended, G. Langtry, Malahide; R. P. Williams; F. W. Zurhorst, Belville, Donnybrook.

GAME.—First, G. Langtry, Malahide. Second, T. H. Howland, Chester. Commended, E. W. Boyle, Dundrum. *Chickens.*—Prize, C. H. Peacock, Carrig-na-greine, Dalkey.

HAMBURGERS (Spangled).—First and Second, R. P. Williams, Hollybrook, Clontarf.

WHITE-CRESTED BLACK FOWL.—First and Second, Miss E. de C. Drevier, Rose Hill, Blackrock. *Chickens.*—First and Second, Miss E. de C. Drevier.

ANY OTHER DISTINCT BREED.—First and Second, Mrs. F. Blair, Balthayock Castle (Crevé Cœur and La Flèche).

TURKEYS.—First, Mrs. F. Blair, Balthayock Castle. Second, Captain G. Hamilton, Kildare. Commended, G. Langtry, Malahide. *Pouls.*—First, E. W. Boyle, Dundrum. Second, Mrs. F. Blair. Commended, Captain G.

Hamilton. *Two Poults*.—First, Capt. C. Hamilton. Second, J. Lentaigue, Tallaght. Commended, J. Hyland, Dublin.

Geese.—First, R. W. Boyle, Dundrum. Second, Mrs. F. Blair, Balthayock Castle. Highly Commended, C. H. Peacocke, Carrig-na-greine, Dalkey; G. Langtry, Malahide. *Geese*.—First, Mrs. Phinne, Stockallen, Navan. Second, Mrs. F. Blair.

Ducks.—First, R. P. Williams, Hollybrook (Rouen). Second, R. W. Boyle, Dundrum (Aylesbury). Highly Commended, C. H. Peacocke, Carrig-na-greine, Dalkey (East Indian). *Ducklings*.—Prize, Mrs. F. Blair, Balthayock Castle (Rouen).

BEST LOT OF POULTRY EXHIBITED BY A PUBLIC INSTITUTION.—First and Second, Mrs. M'Donnell (for the Commissioners of National Education), Glasnevin, Dublin.

RESULTS OF THE BIRMINGHAM POULTRY SHOW.

THIS important Exhibition was brought to a successful termination on the 3rd instant, and it will be seen on reference to the subjoined comparative statement that the admissions were more numerous than on any former occasion; and although, owing doubtless to the unfavourable weather, the money paid at the doors was smaller in amount than in 1862, the deficiency is more than compensated by subscriptions, &c., and the sale of four thousand additional tickets, at 6d. each, for the working classes.

	1860.		1861.		1862.		1863.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.
Monday	184	10 0	221	5 0	197	2 6	264	10 0
Tuesday	340	18 0	375	5 9	310	2 0	303	0 0
Wednesday	338	7 0	400	6 7	385	10 0	327	6 0
Thursday	337	10 0	344	9 0	364	11 0	322	1 3

Total 1,341 5 0 1,341 6 4 1,257 5 6 1,216 17 3

The amount received for the working-class tickets is not included in these figures.

ADMISSIONS.

	1860.		1861.		1862.		1863.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.
First day: Subscribers' Tickets	4,259		4,548		4,579		4,870	
Paid	767		935		820		1,575	
Second day: Subscribers' Tickets	6,618		7,437		7,780		6,060	
Paid	877		406		841		690	
Third day: Subscribers' Tickets	6,567		8,062		7,802		6,346	
Paid	708		509		941		1,060	
Fourth day: Subscribers' Tickets	6,750		6,935		7,491		6,441	
Paid	20,000		29,800		29,500		33,500	
Working classes								
Total	47,378		59,799		60,661		61,530	

The transfers of poultry made through the office set apart for the purpose were more numerous than last year, as the following statistics will show:—

	1862—Pens.		1863—Pens.	
	£	s. d.	£	s. d.
Monday	109	410 14 6	163	661 12 6
Tuesday	48	148 18 6	52	189 7 0
Wednesday	27	105 4 1	25	70 2 6
Thursday	26	77 0 6	40	133 13 6
Total	210	741 17 7	280	1,054 15 6
1863	290		1,054	15 6
1862	210		741	17 7
Pens over 1862	70		Proceeds over 1862	£312 17 11

The sums paid in various instances show that the interest in poultry is not diminishing; and to the foregoing particulars we may add that Captain Heaton's two silver cup pens of Cochins sold for £25 each; that the same exhibitor's second-prize adult Cochins sold for £20; Mr. Henry Lane's first-prize Spanish pullets for £20; Mr. Chase's first-prize adult White Cochins for £15 15s.; Mr. Fowler's third-prize Aylesbury Ducks for £12 12s.; and the following pens for £10 10s. each:—Captain Hornby's Dorking chickens, No. 89; Mr. Dolby's Dorking pullets, No. 164; Mrs. Ferguson Blair's first-prize Brahma Pootra chickens; Mr. Wood's silver cup Game chickens; Mr. Garlick's first-prize Game; Mr. Richard White's single Cochin cock; Messrs. Siddons and Sons' first-prize Black Carrier Pigeon hen. Mr. Bishop's first-prize Cochin pullets went for £10; and Mr. Stubbs' second-prize Game chickens for £10.

Immediately upon the close of the Exhibition preparations were commenced for the transmission of the poultry to their respective owners, and the laborious work was admirably carried out under the energetic superintendence of Mr. Waplebeck. Those birds which had to travel the greatest distance were forwarded by early railway passenger trains on Friday morning, so as to reach their destination in the course of the day and thus, belonging to local exhibitors, were ready

for delivery to applicants by twelve o'clock. The general oversight and feeding of the poultry was entrusted to Mr. Powke, for many years steward and bailiff to the late Hon. W. Vernon, of Hagley Hall, near Rugeley; and the fidelity with which his functions were performed may be inferred from the fact that not a single bird of any kind died from disease or accident in Bingley Hall.

DARLINGTON EXHIBITION OF POULTRY.

THE following are the awards made in the Pigeon classes at the above Show:—

CARRIER (Any colour). *Cock*.—First and Cup, J. Firth, Dewsbury. Second, E. Vaux, Sunderland. Commended, J. W. Wooler, Sanbidge Hall; F. Elze, Bayswater. *Hen*.—First, F. Elze. Second, G. E. Potts, Sunderland. Commended, J. Firth.

POWTER (Any colour). *Cock*.—First, R. Fulton, Depford. Second, W. Taylor, Sheffield. Commended, C. J. Samuels, Longsight. *Hen*.—First, R. Fulton. Second, E. Brown, Sheffield.

TUMBLERS (Almond).—First, F. Elze, Bayswater. Second, G. E. Potts, Sunderland.

TUMBLERS (Any other variety).—First, J. W. Edge, Aston, Birmingham. Second, R. Fawdon, Gateshead.

FANTAILS.—First, H. Yardley, Birmingham. Second, T. C. Taylor, Middlesborough.

TRUMPETERS.—First, J. J. Wilson, Darlington. Second, Master J. Charlton, Munningham.

BARBS.—First, H. Yardley, Birmingham. Second, Master J. Charlton, Munningham.

JACOBS.—First, H. Yardley, Birmingham. Second, Master J. Charlton, Munningham. Commended, J. W. Edge, Birmingham.

TURBITS.—First, J. Taylor, Eaton. Second, R. Thompson, Morecote Hall.

OWLS.—First, M. E. Jobling, Barras Bridge. Second, J. Bell, Newcastle-on-Tyne.

ANY OTHER NEW OR DISTINCT VARIETY.—First, C. J. Samuels, Longsight (Dragoons). Second, H. Yardley, Birmingham (Satinettes). Third, M. E. Jobling, Barras Bridge (Blue Brunswicks).

BEEES DYING OF DYSENTERY.

WILL Mr. Woodbury kindly come to the help of a sufferer, and direct him as to the cause and cure of a disease, which, though not so extensive in its operations, is as deadly in its results as foul brood?

Towards the end of July a swarm was lodged in an empty hive; and as it was impossible for it so late in the season to obtain out of doors a sufficiency of food for winter, it was liberally supplied, at intervals, with sugar till about the end of September, when, from the number of bees in the hive, and the quantity of food stored up, I hoped with a little care to have rendered them secure against frost and famine. But I am doomed to disappointment. During October and November the bees have died off at the rate of one or two hundred per day; and now what was a goodly swarm two months ago can be contained in a breakfast-cup. The bees lie strewn on the floor-board and around the hive. Their flaccid abdomens are somewhat swollen, and when torn up a darkish fetid fluid is emitted. Besides, there are in the hive a very few cells containing either chilled or foul brood. How is the malady to be arrested? Will it infest the neighbouring hives, and should the sugar-filled combs be at once "consigned to the melting-pot?"—ONE IN PERPLEXITY.

[Of late years I have unfortunately been but too familiar with the kind of dysentery described by my esteemed correspondent. Although not able to speak positively as to the cause of the disease, I have a very strong impression that it is often due to the use of artificial food, and also that it frequently arises from the presence of internal moisture. On this account bees in wooden boxes appear more liable to its attacks than those domiciled in straw hives, and it is for this reason that I have recently been led to prefer straw to wood in the construction of bee-hives.

When a colony is attacked at this season, I believe there is little chance of cure. After trying every remedy I could hear or think of, I have found the best palliatives to be the immediate removal of the bees and combs into a clean and dry straw hive, with ample ventilation on the top, and removing all dead bees promptly, by giving them a clean floor-board daily. All attempts at feeding should be abandoned, and the bees disturbed as little as possible. When morning is sufficiently advanced, I have, with the aid of frame-

hives, only the dome, when either bar or frame-hives are used.

hives, effected a radical cure in this manner:—During the middle of a fine, warm day look over the combs one by one until the queen is found, and then imprison her in a queen-cage. Next carry the hive to a short distance, and stand it on the ground, putting an empty hive in its place. This done, spread a cloth close to the removed hive, and, lifting out one of the combs, brush every bee from it on to the cloth, and then put the comb into the hitherto empty hive. Repeat this process with the other combs until the hive be empty, when stragglers should be brushed out and the hive itself removed, not to be again used until it has been thoroughly washed and purified. Finish the operation by putting the crown-board on the new hive, and introducing the queen at the top. Any very young and immature bees may be picked up and conveyed to their new domicile, but no adult bee should be suffered to enter it that cannot rise from the ground and reach the alighting-board by the use of its wings alone.

As I have found this process effectual when every other means have failed, it would appear that the disease is infectious within the limits of the same habitation, although I have never found it spread like foul brood from one stock to another. By shifting the colony into a pure hive into which healthy bees alone—i.e., those able to fly—are suffered to enter, they are at once removed from their diseased brethren, and the plague is stayed.

This disease would seem to be wholly distinct from foul brood, although I have seen both co-exist in the same hive. As, therefore, there are a few cells containing either chilled or foul brood, it certainly would be the safest plan to consign the whole of the combs to the melting-pot.—A DEVONSHIRE BEE-KEEPER.]

FOUL BROOD.

WHEN I sent my last communication on this subject (page 181), I had not the slightest intention or desire to give any offence to those who held opposite opinions to my own; neither could I see any good reason for the style adopted by some towards Mr. Woodbury, more especially when he so honourably came forward, and publicly announced his failures as well as his success. I also thought it a pity that those who had adopted the "tilting" style of argument should be allowed to have it all their own way, and that they ought to be able to take a little of the "poking" themselves. If I have given offence to any one in the remarks I then or now make, I am truly sorry for it; all I desired and desire is to arrive at the truth, so as to enable us to get rid of foul brood from whatever cause it originates; and if each would merely detail his own experience and observations the truth will be elicited, and good will follow. Without saying more on that "foul" subject, I will state what has taken place in my neighbour's apiary as well as my own since our bees came home from the heather.

When my neighbour's bees came home he found all the old stocks diseased, and out of five swarms of this year one was diseased. The swarm had been put into an old hive, which at one time had diseased brood, but the combs had all been removed. In the month of June he cut out all the foul comb from one of his own hives and also from one belonging to a neighbour, but without any good effect, as both were diseased again in September.

Since they came home he has put down all the old stocks as incurable, and has kept the bees, uniting three stocks into one, and put them into a hive full of empty comb which I gave him, and which had been robbed by its neighbours at the hills, but was free of diseased brood. Previous to putting the bees into the clean hive he put them into an eke with some clean comb, and fed them there for ten days with Australian honey and sugar that they might cleanse themselves, and take none of the disease with them.

The feeding caused the queen to commence egg-laying in six days, although she had ceased doing so seven weeks before. He then put them into the hive which I gave him, and supplied them with 23 lbs. of honey and sugar in ten days. The result is that the hive has increased 7 lbs. more than the weight of honey and sugar he gave them, owing to the young brood which she is now rearing. From the lateness of the season he does not expect success in this experiment, still something will be learned from it I expect. He is

careful in keeping this hive well covered, and will use every possible means to protect from cold.

I gave him a swarm of driven bees from one which I had to destroy, where there had been no disease. He is feeding them with honey entirely from diseased hives, which will enable him to see if it has any effect in inducing the disease. He has failed entirely in effecting a cure by cutting out all the diseased comb, as Mr. Woodbury has done, although he has done it with every care.

When I stated in my last communication that I never had seen the disease among any of my hives, I did not expect that I should have it so soon; as, I am sorry to say it has come into one of mine, in a neighbour's hive, and I destroyed it at once, and the disease does not exist in any of the others.

We find in this part of the country that there is more foul brood than many are aware of. A person not far from this told me that he had never seen it in his hives, but when he took a piece of the diseased comb home to his wife, she soon told him that she had seen it often; and when he examined them he found one of them very badly affected. This is a person who, I expected, would have observed it at once, as he has had great experience in bees, and treats them just in the usual way.

I may just state that the queen I had from Mr. Woodbury, and noticed in page 303, is still laying eggs. On November 3rd I inserted a thermometer through the straw at the top of a Woodbury straw hive, between the bars, and was astonished to find that it stood at 85°, and has done so night and day ever since, falling only 2° when we had 10° of frost. It is surprising to me how they can keep up such a heat, as I am not feeding at all. I have other two queens egg-laying at present (October 18th), but would rather that they would stop; but it will enable us to see if it is really the cold that causes the disease. Whatever may occur I will not fail in letting it be known to the apiarian readers of this Journal.

The above was written more than six weeks ago, but seeing the spirit which some of the writers on foul brood were manifesting on that subject, I delayed sending it week after week, thinking that, as the cold weather came on, like the bees they would become quiet. But I regret, as many others do, that hands have not been shaken over this controversy before now, and I for one will not add another word on it, unless to detail what takes place here, either in my neighbour's or my own apiary. I have no motive whatever but to ascertain the truth, and it matters not to me who is right or who is wrong.

If foul brood is caused by cold so much the better, we shall be able to prevent it. If a disease, then let us try and find out the cause, that we may the more readily find a remedy.

On the 23rd of November, I found all the young bees were hatched, not one remained in the cells, and no new-laid eggs, which I was pleased to see. Temperature in the hive 85°, and on December 6th it was 65°, while the out-door temperature was in both cases the same.—ALEX. SHERRER.

BEEES AT THE MOORS AND IN SOUTH LANCASHIRE.

BEEES have done very badly on the moors in Lancashire, Yorkshire, and Derbyshire. The hives that I sent to the moors lost on an average 42 ozs. per hive, and only one hive gained 17 ozs. Although the weather was so very bad, the bees did much better than those left at home, as they consumed on an average nearly double the weight during the same time. It rained in August on twenty-two days, the amount being 3.77 inches, and in September it rained on twenty-two days, the amount being 5.02 inches. The total amount of rain that fell in February, March, April, May, and July was only 5.79 inches, so that in September alone there fell within about three-quarters of an inch as much rain as in the five months mentioned. It is astonishing that the bees did so well with this enormous amount of rain, and I can only account for it by the very large quantity of bloom on the heather. I think I never saw so much before, and if the weather had been favourable the amount of honey collected would have been unprecedented.

During the summer I took from four of my strong stocks nearly 100 lbs. of very beautiful honeycomb; so that on the whole I am very well satisfied and thankful for the bountiful season of 1886. I have now one of the finest apiaries in this country, or, perhaps, in England, as my stocks are in my improved bar-frame hives, strong and with plenty of honey.

Your correspondent, "A SOUTH LANCASHIRE BEE-KEEPER," in his letter, which appeared in THE JOURNAL OF HORTICULTURE of the 3rd ult., seems to have been very unfortunate with his bees this year, as it appears that he has only taken about 5 lbs. of honeycomb, and has finished the season with only two stocks, the same with which he commenced the year, and is in the unenviable position of having his Ligurian stock requiring food to carry it over the winter, and it refuses to carry liquid food into the hive.

You advise him to try the bottle-feeder, but I believe he will find that during the cold weather the bees will scarcely touch it; and as he neglected feeding them up to the required weight in the beginning of October, his only chance now will be to remove the cover of the hive on one side, and put between each of the combs some sticks of barley-sugar. A stock of bees that I purchased on October 12th carried into the hive 8 lbs. of loaf-sugar made into 12 lbs. of liquid food in thirty-six hours. If "A SOUTH LANCASHIRE BEE-KEEPER" will write to me I will try to assist him to make his bees more profitable another year.—WM. CARR, Clayton Bridge, Newton Heath, near Manchester.

DRIVING BEES.

WHEN a person becomes master of any branch of science, it appears so easy that he is very apt to laugh at the novice on seeing him fail in accomplishing some experiment in that branch. This is unjust, but it is quite excusable when we know that the novice is self-conceited and wedded to his own preconceived notions, and will not take advice. Now, I see plainly that it is the case with a great number of your correspondents to whom advice has been given. They are so prejudiced for their own way that they seldom succeed in an operation, even after great pains have been taken to explain that which has baffled them so much. Now, it appears that a great number of bee-keepers fail in driving their bees, although it is a very simple process; and even after the very able and well-advised letter of "A DEVONSHIRE BEE-KEEPER," we yet hear of failures, all arising from the want of a little perseverance in following his directions. Although he has given those directions so plainly, yet there is a point or two which, perhaps, he has thought too simple to mention, and yet they are of great importance to enable the novice to succeed in driving.

The first point is to take care not to enrage a single bee till the hive has been inverted, because it is only at the lifting of the hive that the bees get enraged, and they seldom use their stings after the hive has had a smart rap or two if dealt rightly with at first.

The second point is to dislodge the bees when they appear to remain firm to their hive. This is the trying point to the novice, and hence so many failures; yet the plan to dislodge easily is to remove the empty hive, and in the greatest cluster of the bees to give them a smart whiff or two with the breath or with a pair of kitchen bellows, which will at once set them running.—A LANARKSHIRE BEE-KEEPER.

BEES AND HONEY OF GREECE.—The honeys of Hybla and Hymettus are at this day almost as celebrated as they were in the time of the classical Greek poets; the honeys of Cerigo, of Zante, and many other places, continental and insular, are all fine, and each has its admirers. The honey of Leucadia is, perhaps, almost as good as any, and the descendants of the bees that fed Ulysses deserve some consideration. I was interested, then, in the little bee garden on the site of the old city of Leucas. It was a rocky, barren-looking spot, and did not at first sight seem very promising, for the whole ground for a great distance around looks naked and without vegetation. But it is not really so. Every little crevice or interval between two stones, whether large or small, and not a few holes made by vegetation in the solid rock itself, contain some little flowering plant especially favoured by the bees, such as Rosemary and sage, and

was not much surprised, therefore, to see the bees, but the hives rather puzzled me at first. They consist of small oblong boxes placed on end on a low stone, each box being covered by two or three tiles, evidently to keep off the heat of the sun in summer. Two round holes, each about half an inch in diameter, sufficed for the bees to enter and emerge, and it did not seem to matter much where these holes were placed. The boxes were constructed in the roughest manner, and seemed to have two or three cross sticks within them. They were placed not 2 feet apart, and each box was about 20 inches high, and 9 inches square in section. The bees were exceedingly busy and perfectly good-tempered.—(Asted's *Ionian Islands* in 1863.)

POLLEN-GATHERING.—I was greatly surprised yesterday (December 13th), to see my bees taking in pollen, obtained, I presume, either from some late-blooming ivy or *Laurustinus*, which is in full bloom here (East Cornwall). The 26th of November, the same day on which your correspondent at Crom Castle observed pollen going into his hives, was the day which I had noted down as the last of the pollen-gathering ones for this season.—J. L.

MRS. GARNHAM'S "LADY'S ASSISTANT" is testified by many to be a most useful addition to the work-table. One lady says, "It is a great acquisition to those whose failure of sight prevents their effecting all they desire in finer sorts of needlework, taking up stitches in knitting, &c." Those who do not wear glasses while sewing, yet cannot thread their needles, will find the "Lady's Assistant" invaluable. It concentrates the light most efficiently. Mrs. Garnham is the daughter of the late Mr. Payne, who was our apiarian authority formerly, and she is now residing in Churchgate Street, Bury St. Edmunds, and sells this useful Assistant.

OUR LETTER BOX.

SUBSTITUTE FOR HOLLY BERRIES (J. M.).—We know of no mode of dyeing peas so as to make up for a deficiency of holly berries in winter decorations; but we should melt some red sealing-wax and dip the peas in that.

DYEING MOSS (Moss).—To dye it green, dissolve as much verdigris in the distilled vinegar as possible. To dye it blue, dissolve in a glass tumbler one drachm of powdered indigo in one ounce of sulphuric acid, stir it with the stalk of a clean tobacco-pipe or a glass rod, and, after standing twelve hours, add as much water as will reduce it to the desired tint.

IMPROVING DORKINGS (P. B.).—We think your purpose will be more easily answered with eggs than with a hen, as the change will be effected in less time and more completely. Eggs travel by railway without injury.

FATTENING DUCKS FOR EXHIBITION (E. X. Z.).—All poultry should be shut up when fattening. Exercise is not favourable to the formation of fat. They should not only be shut up, but should have only room sufficient to turn and move.

EGG-EATING HENS (A Victim).—It is believed that hens first eat their eggs for the sake of their shells, in order to form the shells of those that have to be laid. This may be remedied by laying bricklayers' rubbish about their haunts. There are two ways of preventing and perhaps of curing them of the cannibal habit. One is to watch them when they are on the nest, and to drive them from it the moment they have laid. The other is to put very hard composition eggs in the nests. The hens peck at these with no other result than to make their beaks sore, and they get tired of the practice.

BREEDING DORKINGS FOR EXHIBITION (Senex Gallus).—It is considered almost impossible to breed a prize pen from parents taken from the same yard. Those who exhibit the best birds generally choose a cock from one yard and the pullets from another. This is the case in nearly all breeds. Large birds are bred from very large hens put to middling-sized cocks. Your stock bird is heavy enough at 7½ lbs. Ten and a half pound would be a bad stock-getter. We believe the Judges do not weigh Dorkings as a rule. They do sometimes, but prizes are mostly awarded by banding. We do not know the weight of the prize birds at Birmingham.

LONDON MARKETS.—DECEMBER 21.

POULTRY.

It is usual for prices to improve a little on the approach of Christmas, and the present year is not an exception. At the time of our going to press the 26th was not near enough for us to say what the market was, but the customary rise was taking place.

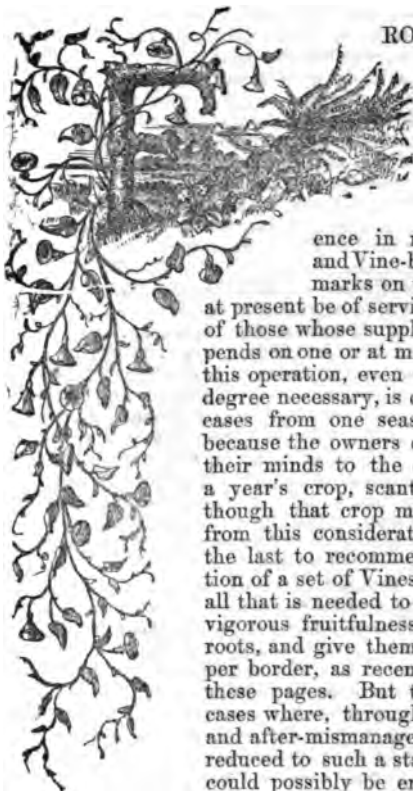
	s.	d.	s.	d.		s.	d.	s.	d.		
Turkeys.....	8	0	to	35	0	Partridges.....	1	9	to	2	0
Large Fowls.....	4	0	"	4	6	Grouse.....	0	0	"	0	0
Smaller do.....	3	0	"	3	6	Hares.....	2	6	"	3	0
Chickens.....	1	9	"	2	0	Rabbits.....	1	4	"	1	5
Geese.....	6	0	"	6	8	Wild do.....	0	8	"	0	9
Pheasants.....			"			Pigeons.....	0	8	"	0	9

WEEKLY CALENDAR.

Day of Month	Day of Week	DEC. 26—JAN. 4, 1864.	Average Temperature near London.			Rain in last 36 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Dava.	m. h.	m. h.	m. h.	m. h.		m. a.	
29	Tu	David Don died, 1841. Bot.	42.9	33.3	38.0	16	9 af 8	56 af 5	58 8	51 9	19	2 11	363
30	W	Wagner died, 1865. Bot.	44.5	33.8	38.6	14	9 8	57 3	1 10	11 10	20	2 41	364
31	Th	Boerhaave born, 1688. Bot.	44.1	33.5	38.8	11	9 8	58 3	7 11	30 10	21	3 9	365
1	F	Lamrstinus flowers.	43.7	31.3	37.5	12	9 8	59 3	morn.	60 10	22	3 38	1
2	S	CIRCUMCISION.	42.5	30.8	36.6	14	9 8	0 af 4	12 0	12 11	23	4 6	2
3	Sun	2 SUNDAY AFTER CHRISTMAS.	42.9	31.2	37.0	18	8 8	1 4	21 1	35 11	24	4 34	3
4	M	Bearsfoot flowers.	42.4	31.4	36.9	16	8 8	2 4	22 2	2 0	25	5 2	4

From observations taken near London during the last thirty-six years, the average day temperature of the week is 43.3°, and its night temperature 32.0°. The greatest heat was 57°, on the 3rd, 1860; and the lowest cold, 4°, on the 2nd, 1854. The greatest fall of rain was 0.86 inch.

RENEWING VINES WITHOUT LOSING A CROP OF GRAPES.



FROM the nature of the many inquiries which have recently been made by amateurs and others who have not had much experience in renewing Vines and Vine-borders, a few remarks on the subject may at present be of service.

In the case of those whose supply of Grapes depends on one or at most two vineries this operation, even when in a high degree necessary, is delayed in many cases from one season to another, because the owners cannot make up their minds to the dreaded loss of a year's crop, scanty and inferior though that crop might be. Apart from this consideration I would be the last to recommend the destruction of a set of Vines however old, if all that is needed to restore them to vigorous fruitfulness be to lift the roots, and give them a new and proper border, as recently described in these pages. But there are many cases where, through a wrong start and after-mismanagement, Vines are reduced to such a state that no hope could possibly be entertained of its being more desirable to go on with

them than to plant afresh. To say the least of it, a crop the season after lifting and replanting them could not be reasonably expected; for I have seen Vines in wet pasty borders with nothing in the way of healthy fibres but a lot of bare black roots, and when in that condition it would require dexterous management indeed to make the Vines bear fruit the same season. True, the loss of one season's crop under such conditions may not be worthy of consideration when weighed against the good results which might eventually follow, yet, in many cases, the fear of this loss is found sufficient to prevent the Vines being meddled with at all.

The question which at once presents itself in such cases is, Can the loss of a crop, even for one season, not be avoided by any other method or scheming that can be adopted? There are many who are perfectly able from their own experience to answer that any such loss is not at all unavoidable, and who would be able to describe how the improvements necessary can be well carried out, not only without causing the loss of a crop,

No. 144.—Vol. V., New Series.

but, on the contrary, so as to be productive of a positive gain the first year.

Let us first take the case of what—with the class for whom these remarks are intended—is considered an early vinery, one from which all the fruit is cut by the end of June, and suppose that it has been considered advisable to renew the Vines and border to the very foundation. Let the forcing commence this year on the 1st of January, so that with ordinary forcing the crop can be all used before the 1st of July. In the meantime the soil and draining material should be all in readiness, or sufficient at least to make half the border immediately the Grapes are all cut, when the old border is to be replaced with a new one, and young Vines substituted for the old. Two Vines for every light, presuming the lights are 4 feet wide, should be prepared in the following way:—Select the required number at once from Vines that have been raised from eyes in the spring of 1863, and cut them far enough down, so that, after they are planted in the new border, last year's wood will extend up the front light to the bottom of the rafters. Set them aside in the coolest available place where they will not be exposed to severe frost, such as a shed open to the north. To prevent them from getting too dry at the root, and from requiring much attention in this respect, plunge the pots in moderately damp soil or rotten tan. In spring, when they have burst their buds and given signs of growth, they should be totally shaken out of their old soil, and planted in shallow boxes formed of pieces of double lath or hazel rods in the same manner as Orchid-baskets are often made. These receptacles may be about 18 inches long, 14 inches wide, and 6 inches deep. Into these the Vines should be carefully planted, and they must then be removed to a cool, light, airy house or pit, where with but very little attention they will progress slowly, making comparatively short but strong, vigorous, young growths by the end of June, when it is supposed all will be ready for them in the vinery for which they are intended. In planting them, the strong wickerwork with which their roots are encased can be easily removed, piece by piece, without injuring the young roots. One of them should be planted at each rafter, and one at the middle of each light. As soon as they are planted give a good watering of tepid water to settle the new soil about their roots.

All is now in readiness for a rapid march to the top of the house; a smart temperature and an ordinary amount of moisture should be steadily kept up till the Vines reach the top of the rafter; then the moisture should be decreased gradually, and a free circulation of warm air kept up by opening ventilators at top and bottom, by which means a well-ripened strong growth may be secured by the end of October. One-half of the Vines should be stopped as soon as they reach within 3 feet of the top of the house, with the object of obtaining well-filled-up fruit-buds to fruit in the following season. The other half of the Vines may be allowed to ramble after reaching the top of the house, but not to such an extent as will crowd the other Vines or even themselves with foliage. As soon as the leaves drop off cut down the

No. 796.—Vol. XXX., Old Series.

Vines which have been allowed to grow very much as they pleased, with the view of making roots, to within 6 feet of the front sash, and shorten those which are intended to fruit next season to about 4 feet from the top of the house. Thus there is a viney furnished with Vines in a condition to yield, if not quite so many bunches as the original occupants did, still finer Grapes by far.

In the year 1859 I cut a crop of Grapes from a house, and planted it in the end of June with Vines struck from eyes that same spring, and had a good crop in the house in 1860. The Vines were planted outside, and introduced through openings in the front wall. I would in that case have much preferred a set of plants prepared and planted as above directed; but when to be planted inside I would just as soon have Vines struck from eyes, although in all cases one-year-old Vines are safest in the hands of the inexperienced. Perhaps some are ready to say that by this system you greatly damage one-half of your Vines by cropping them heavily the first year after planting. Any injury they may sustain must, however, be borne with when an exceptional case or want is to be met. But in my own experience I have found that by cropping lightly in the second and third years the Vines become vigorous enough when in a good border. Sometimes young Vines which are cropped so heavily the first year are then cut back to the bottom of the rafter to give them a fresh start. This is a practice I do not approve of, for the sooner I can get established spurs and close pruning, the more certain is the production of compact serviceable bunches. In some cases I have planted three Vines to a light, and cropped one heavily, and then cut it entirely out. But I prefer the system of two Vines to a light of 4 feet wide; three in so limited a space crowd one another too much. With the five and six-foot lights to be met with now in new erections, three would be the best arrangement; the two to be retained would then have sufficient room, and all the fruit could be allowed on the third and temporary one that it could bring to perfection.

Another arrangement that I have had recourse to, is to cut out the old Vines in autumn, make the border in the course of the winter, or early in spring, and having prepared two fruiting pot Vines for every light, to place one at the bottom, and one at the top to be trained down, at the same time planting the permanent Vines, and as soon as the fruit is cut from the pots, to remove them out of the way. This is the best method in the case of late-ripening vineries from which the crop cannot be cleared soon enough in the season to let the young Vines establish themselves and ripen before winter. By adopting the system of fruiting in pots the permanent Vines can, of course, be planted at the proper time, and have all the season before them to make finer canes. It entails, however, more labour, and in the case of many who have not means to prepare beforehand the required number of pot fruiting Vines, it might be considered expensive to purchase them.

There is another way which is adopted with success where there is a border both outside and inside the viney. A temporary border of light, rich soil is made on the surface of the old outside border, very much in the same way as Mr. Lane, according to Mr. Fish's description, has formed his Vine-border on the surface of the natural level. A few of the most worthless of the rods are cut out of the viney, and those left are trained wider apart, so as to admit of the young ones planted in the temporary-border manner being trained up between them. Should these young stop-gaps not make strong growths in the first season, they must be cut down, and they will do so the next. Young Vines never run up so vigorously among old plants as when a wholly new lot are planted together. In the second year the old Vines are cut out, and the young are in their place to give Grapes. In the same season in which the old Vines are done away with, the inside border is cleared out, the arches built up, and a set of permanent Vines planted inside. The arches are built up to keep the roots from running out into the bad border, which they are ever prone to do, for Vines always send three-fourths of their roots outside when they are planted inside. As soon as fruit can be had from the permanent Vines the stop-gaps are done away with, the outside border made, and the arches opened, and so in the course of three years the new and good foundation is accomplished.

object, but probably some may prefer it to the entire want of Grapes for even one year.

It is in contemplation to rebuild two very old vineries here next autumn after the crop has been all cut, and as the reconstruction of both from the very foundation is necessary, the Vines will have to be done away with. The Grapes in the earlier of the two will be cut in May; and with the view of having Grapes in these in 1865, the plan proposed is to bring on a lot of young Vines to be ready to shift into 16-inch pots as soon as the Grapes are all cut, and to grow enough of 10 or 12-foot rods to give a Vine for each rafter in both houses, and, as soon as the fruit is cut from them, to remove the pot Vines out of the way. Thus different circumstances require different modes of procedure to meet the end in view. In the latter case the lights will be 5 feet wide, so that there is plenty of room to plant the two permanent Vines, and fruit the Vines in pots in the same light without injury from crowding to either.

I am not, however, an advocate for planting or fruiting any Vines besides those that are to be permanent in the renewal of vineries, and the practice is not to be recommended unless in such cases as are being dealt with, where the entire loss of a crop for one year is an inconvenience. Where there is anything besides the permanent Vines, it cannot be said that they get every justice the first two years when any of the arrangements proposed are carried out. But, on the other hand, there is no permanent injury arising from any of the modes referred to, and it is much more easy to become reconciled to any little disadvantage to which the permanent Vines are subjected for a couple of years than to the entire want of Grapes for the season.

There is another matter which often frightens owners of small gardens from renewing their Vine-borders, whether they retain their old Vines or not—namely, the idea that good Grapes are not to be produced except in such soils as are described as fine, calcareous, fibry loam, &c. No doubt such a staple is the best for Grapes, but it is not by any means indispensable, and no one need be deterred from cultivating the Vine with success who can command any common garden soil that is not very clayey in its nature. Common loamy soil from a garden quarter, with old mortar rubbish, bones, and a little well-rotted manure, will, with attention to other points of good management, produce excellent Grapes—far better than will the sloughs of despond which were not long ago compounded by certain growers, and by some very properly termed “witches’ caldrons,” composed of turf and loads of muck, with carrion, and every other gross item that could be thought of. Such masses of corruption might give stronger growths, but not fruitful ones, for a year or two; and the ultimate decline of the Vines is certain in such borders, entirely opposite as they are to the nature and requirements of the Vine. The natural soil laid on a dry bottom would, in many cases, be much more satisfactory than a good deal of the border-making that is carried out; and it may safely be said to any one who is desirous either to improve his old Vines or to plant new ones, that turfy loam is not indispensable to very healthy Vines and good crops of Grapes.

D. THOMSON.

EXHIBITING ROSES.

I AM glad to find that one Rose-grower at any rate has expressed his opinion on this subject, and that on some points he seems to agree with me; and I hope that many more may be induced to give their views on the points mooted, as we may thereby benefit the whole Rose-growing community. As I write this away from home, and have not my former paper to refer to, I must trust to a not-very-retentive memory in replying to your correspondent, “P,” who talks about logic, but whose opening paragraph exhibits a sad deficiency of that sometimes-useful article; for he first finds fault with me for not entering into the question whether Roses ought to be exhibited as single blooms or trusses, and then declares that I said they ought to be shown in trusses. If I were guilty of the first charge I could not clearly be of the second; but in truth I did not enter into the question of single blooms, but into the definition of a truss. Many Roses, such as Louise Peyronny, rarely have anything but single blooms, yet I should call that a truss. No the question in my mind, and which I thought I had

made intelligible was, whether that could be called a truss from which some blooms had been taken, but that at any rate some rule ought to be framed with regard to the dis-budding as there is one with regard to additions; and I did express my opinion that a truss should be shown as it grew, because I believed the practice of disbudding tended to give us coarse Roses, and I say so still notwithstanding "P.'s" disclaimer. I cannot agree with the sentimental notion that a Rose cannot be coarse. I have seen a stand ("pan" I cannot apply to the Rose), of Anna de Diesbach, naturally a large flower, so thoroughly out of character by excessive cultivation that it might very well have been mistaken for one of Pæonies. I have seen, too, even Général Jacqueminot so large that all the colour was washed out of it, and the character of the flower entirely gone. I have, too, in my mind's eye other stands, where all the beautiful variety of tint had vanished because of the very high cultivation.

And then as to "P.'s" desire of getting medium-sized Roses up to the size of the larger ones for the sake of producing uniformity in a stand, I would say that I hate uniformity. I think a stand where the size of the bloom is graduated infinitely preferable to one where the blooms are all alike in size. We know that the same holds good in Dahlias, and many a flower is described as a "noble back-tier flower," and others as "good for a front row." So again with Tulips. I do not, therefore, think there is anything in "P.'s" statements here to make me alter my opinion. Then, again, there is the same confusion, I fear, in "P.'s" mind with regard to my observation about the "natural production of the shoot." I did not use that to show that Roses should be shown as trusses, but why a shoot disbudded to one bloom could not be called a truss. He triumphantly asks, What is the natural production of a shoot in a Carnation, or Pink, or Hollyhock, or bunch of Grapes? I will only reply these are not called trusses. Would—for this is the point—"P." call that a spike of Hollyhocks from which every flower but two or three had been taken? Would he designate a dozen monstrous-sized berries as a bunch of Grapes? The Pink or the Carnation have nothing to do with the question, as they are invariably shown as single blooms; and into the respective merits of single blooms and trusses I beg again to remind "P." I did not enter. I must own to preferring trusses to single blooms; but I think that the various tastes on that subject might be met by giving some prizes for the one and some for the other, which might easily be done if some of these Fancy classes were discarded, which only tend to confirm and give wrong notions to those who are merely lookers-on.

I find again that "P." differs from me as to the separation of the classes; but as he does not adduce anything in opposition to what I have stated, it will not be necessary for me to say much on this point. There is an old saying, "The proof of the pudding is the eating." We have never yet, I am glad to say, seen stands of Hybrid Perpetuals only. We have seen them of Moss Roses and Teas, and I am perfectly satisfied that they have never met with approval from those who have seen them. A Moss Rose is very beautiful as a bud, but in no other way; and a stand of buds does not sound very lively at any rate, while half or fully-opened blooms look unusually poor alongside the brilliant and beautifully-shaped Hybrid Perpetuals and Bourbons; and Teas are miserably washy by themselves, although most lovely as a contrast or as a single bloom for a vase.

I hope there is nothing in these observations which "P." will consider discourteous, and that he and others will frankly state their views. These are matters which always are the better for being ventilated; and if we could only induce Rose-growers to give their opinions on them before another season, some of the shows might perhaps be regulated as the wishes and views of exhibitors may tend.

Another paper on Roses in the same Number has set me thinking on another point that I should like to have information upon—viz., as to the sorts which best suit the various localities, for there can be no doubt that there is a great difference on this point; for while there are sorts which are good everywhere, and will grow everywhere, there are some also which are better in one place than another. As a rule, I should think the fuller Roses would do better in the south, and those less so in the north; but a certain

amount of fulness is indispensable. When Roses show the eye their beauty is to a great extent gone.

Since I wrote on the Gladiolus I have lifted my bulbs, and have been surprised at the wonderful growth of some of them. I may mention that a small-sized bulb of Helen, one of Mr. Standish's seedlings, produced, besides a number of offsets, two bulbs, each of which measured $11\frac{1}{4}$ inches in circumference; and I have seen nothing in the bulbs in general to induce me to imagine that I shall have any disease amongst them. I am now carefully drying them.—D., Deal.

A PLEA FOR ORCHARD-HOUSES,

WITH REMARKS ON THEIR MANAGEMENT.

THERE is no system in gardening which has been introduced during the last quarter of a century, that has had to contend with so much opposition as orchard-houses. They have had to battle against ignorance and prejudice to a serious extent. Some of our most eminent men in horticulture, as we thought them, have come forth marshalled against it, with a determination to crush the system if possible and send it into oblivion. But, notwithstanding this, orchard-houses still exist, and are on the increase; and during the last ten or a dozen years, they have sprung up to a great extent all over the country.

There can be no doubt but a well-managed orchard-house is one of the very best modern improvements in horticulture for the growth of our choice and tender fruits in this our precarious climate. I am aware that many people have failed in the production of large crops of fruits from trees in pots. I remember about five years ago when a resident in Kent, visiting a gentleman's place of large extent, a few miles from Maidstone; and in going through the forcing-houses, the gardener pointed out to me and a friend who was with me, a number of Apricot trees in pots, destitute of fruit, a circumstance not to be wondered at. Now he, not being able to succeed with the growing of Apricot trees in a forcing-house, condemned the system *in toto* of growing fruit trees in pots. When we remember that the Apricot is a native of the snow-clad mountains of Armenia, the slopes of Caucasus and Ararat, it is no matter of surprise that it should refuse to flourish and produce its luscious fruit in the confined air of a hothouse. This is not the only instance in which I have seen the Apricot fail, and judging from my own experience, I consider the Apricot the most precarious of any of our orchard-house fruit. I have known others who stand high on the pinnacle of fame, who have attempted to grow pot fruit trees, but through some cause or other that I am not acquainted with, have failed in their endeavours, and therefore given up the system in disgust. Now it does not follow that because a few have failed all should do the same. I presume that orchard-houses are at present only in their infancy; we have much to learn with regard to their management, and past successes only indicate how much more may be accomplished by diligence and attention.

Having the charge of a small orchard-house, I can testify to their adaptability to places of limited extent. The house is a lean-to on the principle patented by Sir Joseph Paxton, is about 40 feet long, 10 feet or $10\frac{1}{4}$ feet high at the back, 4 feet high in front, and about 10 feet wide. There are two Peach and two Nectarine trees planted on the back wall. There is a border 18 inches wide in front of them, and then a trellis 18 inches wide to walk on; this leaves about 7 feet between the trellis and the front wall, which space is devoted principally to Peach and Nectarine trees in pots. When I took charge of this house and others two years since, there was a greater variety of trees occupying this space—including Peaches, Nectarines, Cherries, Plums, Apricots, and Pears. During 1862 the trees made such rapid progress, that in the past summer we could only accommodate about six Peaches and six Nectarines, with two or three Pears. Now let us look at the produce of these twelve potted trees. The trees on the back wall have been planted three years, and my greatest difficulty with them is to check overluxuriance, notwithstanding the severe root-pruning they underwent last winter. But to return to trees in pots. When the blossom-buds began to expand, about the beginning of March, we gave them the advantage of a little artificial

the house is supplied with a three-inch flow and return pipe. I believe that ten out of every twelve Peach and Nectarine trees set ninety-nine out of every hundred blossoms; two trees out of the twelve did not set so well, which I attributed afterwards to a defect in the drainage. The first fruit from Hunt's Tawny Nectarine was ripe on the 10th of August, and the tree kept in bearing until August 31st, when the last fruit was gathered. It produced about four dozen, and most of them were quite equal to what are generally seen on walls. On referring to my memorandum-book, I find the first time I saw this beautiful Nectarine was at the Royal Botanic Society's Exhibition, Regent's Park, in July, 1861, when I considered it the prettiest Nectarine I had ever seen. Next comes Acton Scot Peach, a variety so well known that it requires no comment. The first fruit was ripe August 11th, and the tree was in bearing until September 1st: we gathered about four and a half dozen from this tree. Early York Peach was ripe August 12th, and the last fruit was gathered on August 21st. It is a fine early Peach, but growing by the side of Acton Scot it was one day later than that variety. The first fruit of Royal George was gathered on August 15th, and the last on August 31st. It was a small tree, but bore a heavy crop, two and three Peaches on one small shoot where only one ought to have been left. The fruit weighed about 5 ounces each. The next in succession was a small Elruge Nectarine with only a medium crop, it supplied fruit for eleven days. Duchess of Oldenburg Nectarine ripened its first fruit August 21st, and the last was gathered September 4th. Many of the fruit were extremely fine, and the tree carried about two and a half dozen. A larger tree of Elruge Nectarine, but only in a 13-inch pot, was allowed by way of experiment to carry six dozen, which it ripened and coloured satisfactorily. It was in bearing three weeks; thus one pot tree alone supplied two dozen of fruit each week for three weeks. Violette Hâtive Nectarine kept up a supply for ten days, the crop was medium, but the fruit good. The same remarks apply to Pitnaston Orange Nectarine, only the fruit was still finer; no collection should be without it. The Angers Late Purple Peach is a later variety, it is a beautiful large Peach, and was the admiration of every one who saw it, but the fruit is liable to fall before it is perfectly ripe. My employer speaks of it as being fine for tarts, as some of the unripe fruit were used for that purpose. I have no doubt they would make excellent *compôtes* as described by Mr. Rivers in his book on orchard-houses. It was in use from August 29th until September 15th. Two other Peaches, Noblesse and Vineuse de Fromentin, did not set very freely for the reasons above stated, and not looking equal to the rest I pulled the fruit off. Having made the defective drainage good, the trees are in equal health with their neighbours, and judging from the round plump buds with which all the trees are covered "from stem to stern," there is the promise of a better crop of fruit next year.

With regard to growing Pears in orchard-houses, some people seem to sneer at the idea. It is all very well for those who are situated in the southern and western counties of England; but here in this cold and cloudy district, where we only have, perhaps, two tolerably good Pear seasons out of seven, orchard-house Pears are invaluable. I had this season a Louise Bonne of Jersey Pear in a 12-inch pot in the orchard-house, which bore fine fruit, while one of the same variety planted outside, with space for the roots to ramble at large, was not one-quarter so fine. There was, in fact, as much difference between them as there is between the best Grapes I have ever seen at the metropolitan exhibitions and the rubbishy little bunches on the cottage walls near London. The same may be said with regard to other Pears. Last year I grew Soldat Espere Pear in a 12-inch pot in the orchard-house; but not being able to find it accommodation this season it was planted outside, and has produced a nice sprinkling of fruit. I believe that one Pear of last year, when grown in a pot under glass, would weigh as heavy as six produced this season out of doors. I might multiply instances, but forbear to trespass on your valuable space.

I will now briefly advert to the management of orchard-house trees, confining my remarks chiefly to Peaches and Nectarines, and I shall state what I have practised myself. We will suppose that the trees are in 13-inch pots and that

be losing their leaves, and the wood will be fully ripe. The principal point now to be attended to is the top-dressing. I top-dressed my trees about the end of October; the compost for the purpose, consisting of about two-thirds decayed turf, and one-third rotten manure and sifted bones, was well chopped and mixed together, leaving a good portion in lumps as large as an egg. It was placed in the orchard-house about ten days before it was required for use, and when that time arrived it was dry and in a workable condition when wanted, and also of the same temperature as the house in which the Peaches and Nectarines were growing. The first wet day we had towards the end of the month was taken advantage of to supply the trees with their fresh food. I remove a quantity of the old soil from the surface of the pots, and one-third or nearly halfway down between the sides of the pot and the ball, and several inches in width, according to the size of the pot. This space is filled up with the fresh compost, taking care to ram it firmly as the operation proceeds, for the more firmly the soil is rammed the more food will there be for the plant. I then give a soaking of water to settle the fresh soil about the roots, and the trees are placed close together, as they will do with half the space in winter that they require during their season of growth. This is one great advantage in having the trees in pots, and it leaves plenty of space for the protection of Strawberries for forcing. Late Cauliflowers not having perfected their heads in the kitchen garden can be taken up and laid in by the heels, as also early winter Broccoli; and if the weather proves very severe these will give a supply of nice small heads in winter, and be found extremely useful.

It has been recommended that the trees should have no water, or but very little, from October to February. This I consider, with all due deference to the opinions of my superiors, a mistake, and I believe that following this advice to the letter is the source of endless failures. The ball becomes perfectly dry, and the roots confined within the limits of a pot cannot ramble away from home in search of food and moisture. The consequence is the buds shrivel, and either fall off or expand very weakly. It is necessary to make some allowance for the difference in the houses in which the trees are cultivated. In houses heated by hot-water pipes, or supplied with any other artificial heat, when those means are brought into use during seasons of extreme frost, unless the pots are covered with a good thickness of litter the soil will become extremely dry; and, therefore, more water will be required than when the trees are in a house without such artificial appliances, and where they are covered with litter from the time they are top-dressed. I would by no means saturate the balls in winter; but I believe one very important step to success is to avoid extreme dryness.

About the beginning of February, or should the weather prove mild and sunny even by the end of January, the buds will begin to swell, so that the uninitiated may be able to distinguish without much difficulty the fruit-buds from the wood-buds. The young shoots should be shortened to within eight or ten buds of their base for bush trees, always cutting to a wood-bud, and keeping in mind the symmetrical shape of the tree designed to be formed. When some of the side shoots are allowed to grow 15 or 18 inches long without stopping in the summer, I have frequently observed that they will be set with single fruit-buds nearly from their base to their terminal point without any wood-buds. In such cases I would not shorten the shoot, as all the buds would ultimately fall off; but to prevent the tree from acquiring a straggling habit by encouraging such lanky branches, I would allow the shoot to break at its point, keep it pinched in during the succeeding summer, and encourage a fresh shoot from its base, as there will often be two or three leaf-buds at the base of such shoots, and then at the following winter's pruning the old shoot must be removed close to the base of the newly-made shoot, and the new one allowed to take its place.

When the pruning is finished, the trees should be painted all over with sulphur and soft soap, about a quarter of a pound of soft soap to two or three quarts of water, with as much sulphur as will give it the consistency of paint, and a little clay must be added to cause it to adhere to the trees. This mixture must be well applied to every part of the tree

with a painter's brush, taking care to work it in underneath the buds. During the resting period the trees should be exposed on all favourable occasions to a free circulation of air, for if the house is kept too close in early spring and the weather is either mild or sunny, it will cause the blossom-buds to expand prematurely. When the buds begin to swell the trees may be syringed daily when the weather is fine, until the flowers commence to open, and when in bloom a dry atmosphere must be maintained with a good brisk current of fresh air continually rushing through the house. If, while the trees are in bloom, the weather should be dull and cloudy, a little fire heat during the day with plenty of air will be found useful, and artificial means of fertilisation must be had recourse to, by simply passing a camel's-hair pencil over the anthers and stigmas, to distribute the pollen which adheres to the anthers without being properly dispersed. A light hand and nimble fingers will soon pass over a large number of trees. When the air is dry my employer will occasionally give the trees a rap with his walking-stick as he is walking through the house. The temperature of the house while the trees are in bloom should never range higher than 55° by day unless by sun heat, nor more than 45° or 48° by night.

As soon as the fruit is fairly set, syringing may be again commenced and carried on until the fruit is changing colour, when it must be discontinued. The end of the syringe should be pointed underneath the leaves, as there the red spider will take up its quarters, and it is well known that it is no advocate of the hydropathic system. The fruit being pretty secure may be thinned, leaving a few more than the tree is intended to carry, as during the stoning period some are certain to fall. The trees will now be smothered with a host of young shoots, which must be considerably thinned, reserving those shoots nearest the base of the previous year's wood. As the trees advance in growth they will require the points of the shoots to be pinched out. Much of the mode of pinching will depend on the shape which the tree is desired to take; when it is intended to form it into a close conical-shaped tree, the shoots must be pinched very closely, to within three or four buds of their base, and as they keep putting forth fresh shoots these must be pinched again and again. When the tree is intended to be formed into a bush the shoots may be allowed to grow rather longer before they are pinched, the laterals or side shoots should be pinched to within one bud of the base, and the leading shoot at every five or six buds. Weak manure water will be found useful twice a-week after the fruit is set, and the temperature may be raised from 10° to 15°. The trees may also receive a surfacing of rotten dung with advantage, and the dung not washed away by watering will be found in the autumn one mass of roots. They must receive no stimulants during the time of stoning or the fruit will fall. The trees are then enjoying a partial rest, and therefore must not be excited either root or branch. When the fruit is stoned it must be finally thinned, not leaving too many on a tree. As they approach maturity the atmosphere of the house must be kept dry with plenty of air, or the fruit will be liable to crack. During the whole of the growing season they will require copious supplies of water; but when the fruit is gathered water must be given more sparingly.

I have endeavoured to touch as briefly as possible on some of the leading points in the cultivation of these beautiful trees. I might considerably enlarge on the subject, but fear lest I should encroach on your space. I am certain that to any one with only a small orchard-house and only a limited number of trees, if those trees are treated properly they cannot fail to afford an endless source of pleasure. The cultivator watches with feelings of intense pleasure the expansion of the first blossom-bud, the unfolding of the leaves, the development of the fruit; and as it approaches maturity and he breathes the fragrant odour which it exhales, he cannot fail to feel thankful to the Giver of all good things who so bountifully supplies His creatures with these charming fruits.—*QUINTIN READ, Gardener to the Rev. W. H. Holt, Biddulph, near Congleton.*

MISTLETOE.—I observe, among the answers to correspondents, in your Journal for Nov. 24, that you ask for information respecting the Mistletoe. On referring to my journal of

1859, I find that during that year it was growing on the Lime, Apple, Thorn, Oak, and Maple, all in this neighbourhood, but chiefly on the first three trees. There is plenty growing in this part, but up to this time I have not traced it on any other tree.—*W. DIVERS, Gardener to Wm. Moore, Esq., Wierden House, near Staplehurst, Kent.*

HAVING read an account in THE JOURNAL OF HORTICULTURE of Nov. 24, respecting the Mistletoe growing on various trees; I beg to inform you that there is a very fine bush of the Mistletoe growing luxuriantly on the Acacia—*vis.*, Robinia viscosa, in the Priory Gardens, Great Malvern, the residence of Dr. Gulley.—*JAMES WATKINS, Gardener to C. Lawrence, Esq., Cirencester.*

SMALL OR LARGE BRUSSELS SPROUTS,

WHICH ARE MOST WORTHY OF GENERAL CULTIVATION?

I SENT three dwarf heads of what I consider extra samples of Brussels Sprouts for the opinion of the Fruit Committee of the Royal Horticultural Society at Kensington. They were about 14 or 15 inches high, and closely studded with most compact firm sproutings. The opinion of the Committee was that they are too large ever to become a variety of any importance, seeing that the desideratum in that vegetable is to procure it as small as possible. I consider, then, that it would be a matter of no small public importance to know the criterion of a perfect specimen of a profitable kind of Brussels Sprouts, combining every property worthy of cultivation. The Committee think that to have the individual sproutings as small as possible is the chief object. Will that be the size of a round button or the size of a boy's play-marble?

The great desideratum I consider in every vegetable is to have a variety that will produce the largest quantity in a given space of ground, but in a perfect condition for table use. The samples sent, no doubt, had every individual sprouting the size of three marbles. Now the produce of the latter will be more than double, and still be in a condition perfectly fit for the table of any gentleman, not to speak of the million to whom it is invaluable as a winter dish.—*WM. MELVILLE.*

[We have made inquiries, and find from members of the Fruit Committee well acquainted with the subject, that the Brussels Sprouts preferred for first-class dinner-tables are those which, being the size of a boy's play-marble, are at the same time very compact and firm. By "the million," with whom quantity is a prime consideration, your new variety may be highly estimated.]

For appearance at table, as well as delicacy of flavour, we agree with the Committee that the smaller sprouts are preferable. In addition, we will add, that if the smaller sprouts are produced as densely clustered round the stem as we have seen them, we think there would be little difference between the weight of produce of them and of the larger sprouts.]

MATERIALS USED IN FORMING COMPOSTS.

(Continued from page 487.)

SAND.—Most soils contain a certain portion of this; in fact, it may be truly said that sand exists in greater or less quantity in all soils supporting a vigorous vegetation, although the character of the sand, or rather the substances it is incorporated with, may differ very much in the individual compounds. A mountain peat contains a large proportion of sand, which, however, differs widely from that found in the dry upland tillage fields of certain districts. The grit itself may be the same in both cases, but the chemical substances with which it is incorporated make a wide difference in the action it has on vegetation. It is, however, an essential ingredient in all the artificial compounds in which choice plants are grown, and some circumspection ought to be used as to the kind of sand mixed with the other materials forming the compost.

I have already stated that sand exists in most soils, and most likely in those to which it is added on the pot bench; so before going into the merits of the different

it would be well to still further investigate the matter, and ascertain what are the various conditions in which vegetation is found when in contact with sand in greater or less abundance. In the first place we may examine the sandy beech subject to the heavy spray of salt water; a certain description of vegetation exists there, more or less vigorous as it is afforded shelter; but the sand having been so repeatedly saturated with salt water is unfit to grow anything in but what delights in abundance of salt. Certain plants seem to relish large quantities of salt, and to such the sand of the seashore is at all times acceptable. Asparagus and Sea-kale both delight in a salted medium, and they, of course, cannot well have too much; while with many of the hardwooded plants inhabiting stations more inland, sand strongly impregnated with saline matter is almost fatal to them. Sand from the seashore has, therefore, been in a great measure banished from the potting-shed, and is, perhaps, only recommendable as a substance in which to pack Carrots, Beet, and other roots which require to be kept from withering, and also from the action of worms. Celery taken up on the approach of severe weather, may also be safely stowed away in such sand, and the same may be said of Horseradish. It is also very convenient, when in a frame or pit, to receive the balls of Endive plants that may have been transported thither prior to hard weather setting in. I am not certain but that a due proportion of sea sand might also be added to the Peach-border if the latter be dry; but there, except in a few other cases, its utility as a gardening agent may be said to end, and another kind of sand must be used for the other purposes for which sand is required.

Perhaps the next abundant supply of sand which a district contains will be what is usually called pit sand, such as is met with in layers, often of great thickness, under the surface. Sand-beds, or pits, exist in most districts. Even the great breadth of clayey lands we hear of existing for several miles at a stretch have, nevertheless, now and then a break in their strata, and sand in one form or other is found. Of the various kinds of sand thus met with, colour is, perhaps, the least important point of merit, although it is much looked at, and if it should be white its presence is the more conspicuous; but yellow, brown, and grey sands are, nevertheless, equally good in their way, and may each be used when they possess the necessary qualities fitting them for the purposes for which they wanted.

White pit sand is a favourite with the propagator of hardwooded plants, when it is free from all pernicious chemical substances, and has been sufficiently exposed to the action of the atmosphere to sweeten and prepare it for the roots of delicate plants first forming rootlets in it. Pit sand, however, is sometimes anything but favourable to the plants growing in it, some chemical substance entering into the mixture at once fatal, or, if not, certainly hurtful to vegetable life. Generally speaking, the merits of a sand for the purpose of mixing with other substances, may be guessed at by the condition of such herbage as exists upon it where it is found. The most pernicious substances, it is true, acquire a certain amount of fertility by exposure to the atmosphere, but the long period which must elapse before they attain this condition must be taken into account. If a few spadefuls of sand are taken from a considerable depth below the surface and spread thinly on the ground, it will more speedily part with its noxious qualities, and acquire those necessary to make it a fit agent to support vegetation, than if a larger quantity were brought to the surface and then piled up in a heap.

Some pit sands contain salts of various kinds, others iron, and some—for instance, those found in certain places in the south-west of England—a large amount of copper, and these last are, perhaps, the most pernicious of all, killing vegetation when they come in contact with it. Thus, unless the amateur has some knowledge of the component parts of pit sand, or has the means of judging of its effects on vegetation at the places where it is to be had, he had better refrain from using it and adopt the next kind that will be described, which is

Drift Sand.—By this I mean not sand from a tidal river, and containing more or less salt in proportion to its proximity to the ocean, but sand washed by some clear fresh-water stream, not poisoned by any chemical agent, and unfit for any purpose for which it is used.

Generally speaking, most fresh-water streams throw up beds of sand at places along their course, and these, having received repeated washings, have parted with all deleterious matter, and are fit to apply to the roots of anything requiring an open, coarse, gritty sand. This kind of sand may, therefore, be used without fear. Perhaps, however, a sand containing more fine matter may be wanted, especially for the finer work of striking cuttings of such hardwooded plants as are slow and difficult to propagate. In this case another kind of sand may be advisable, but for general purposes of mixing the sharp gritty sand will be found the best. Drift sand, however, is not confined to that found by the sides of rivers and streams, but in many instances the sides of public roads present it in quantities more or less abundant as the character of the material the road is formed of differs, but the beneficial effects of the rains which fall, coupled with its exposure, purify it to a certain degree of most of its hurtful constituents. Road sand may, therefore, in most cases be safely used. Perhaps, however, it ought to be only sparingly applied to Heaths and similar plants when it is taken from a road composed of flinty or chalky matter; but such roads afford much less sand than those made of stones of a contrary description, and in both cases it is materially improved by the action of the atmosphere and the rains that wash out much of the foreign matter. Sand, also, abounds in some soils to such an extent as to make them appear all sand, and the surface sand of such places may be used with advantage for plants resembling in character, or rather in their wants, those found wild there. We have seen a sandy hill covered with Rhododendrons in the most luxuriant health, and, of course, such a sand might be safely transported elsewhere for their use; but, generally speaking, these places do not exist in sufficient abundance to supply the wants of those who may require a few barrowloads of sand; and such as have no other means of ascertaining the quality of the article found in their neighbourhood cannot well do better than procure some from the edges of a stream, or, in the absence of that, let them try the road sand. The weeds which the latter will produce from its contact with hedge plants, &c., is one proof of its fertility.

Having described charcoal, burnt clay, peat, and sand as substances used in the formation of artificial compounds suited to the wants of plants for which a soil exactly to their liking did not previously exist in the same proportions, I shall now take a step in another direction, and point out some substances which, perhaps, ought properly to be regarded as manures, and, consequently, as stimulants. These substances are in themselves so numerous that any attempt at fully describing them would occupy more space than could be afforded, and besides, most of them are so well known that a repetition of their properties is needless here. There is, however, one point which is not, in general, sufficiently thought of when manures are applied to a plant, and which it would be well to point out here. It is, Whether such manure when applied is intended merely as a stimulant to benefit the plant for a short time only, or is wanted to supply that plant with a store of food on which it may rely for a considerable period. Attention to the latter requirement has only recently been acknowledged as of importance, and is yet far from being so general in preparing compounds in which plants are to be grown, that I cannot but advert to the matter; in fact, it is this especial subject that has induced me to conceive this article.

Quickly decaying substances are, no doubt, of great service to plants of rapid growth requiring strong stimulating assistants when young, but their nourishing properties are all expended by the time the plant has attained maturity, or, perhaps, before, and the residuum is incorporated with the soil whether there is any chemical affinity between the two or not. Now, some plants, such, for instance, as the Vine and all fruit trees, and even plants of a more herbaceous character, have a prolonged growth, and, consequently, require long-continued and well-sustained feeding during that time. They consequently require a soil or substance open enough to receive such foreign matters as may be supplied; hence the large quantities of inert matter which enter so largely into the composition of so many of the best Vine-borders of the country; but as many of these substances are indeed fertile or nearly so, we will treat them by, and

go on to specify such as are in themselves good manures, but which, nevertheless, do not too quickly fall into the condition of complete decay. The list of such things is a larger one than I can give, and I will confine myself to calling attention to one or two; those which I recommend being vegetable matters, not by any means of quick growth, but which are of a tough fibry nature, have taken years to attain their present condition, and during that time have been exposed to all weathers.

Moss.—Beginning with this, I must observe that the kind I mean is that found on moist waste places where the land is poor, and where other and more useful herbage has given place in a great measure to this low but persistent plant. Moss, such as is used in nurseries for packing, might very often be applied to other purposes with great advantage, especially to such plants as have long rambling roots and delight in sending them forth in search of that food which does not exist close to their collar. Moss has long been used as an important adjunct to the compost in which Pines are grown, and the proportion so used is often a large one. When covering the broken crocks at the bottom of a pot it is often the receptacle of as many roots as can find space there; and if it should happen that plants of various kinds have been plunged in a bed of Moss, the rapidity with which the roots find their way into it, and occupy it, proves how much they like it. Moss, also, has a quality of its own not possessed by many things in which plants live and thrive. A Hyacinth will root and flower well in a handful of damp Moss, and that Moss can be handled and moved about without employing a flower-pot or other vessel to hold it together. Returning to the subject of Pines, I do not know of any way of managing suckers, or, it may be, crowns that are wanted for future plants better than tying a handful of Moss about their base with a piece of matting, and planting them either in pots or in the bed. They root very freely through the Moss and quickly become good plants.

One of the especial purposes we apply Moss to here is, in the spring when the number of bedding plants alike require everything in the shape of a pot, and also every inch of glass. At that time we make up a slight hotbed often of short grass and old loam mixed, and cover it with light leafy soil. We then separate the store-pots or boxes of Geraniums and similar plants, and tie a piece of Moss around the root of each with a small portion of soil inside the Moss, the whole being about the size of an ordinary lemon. The plants are bedded closely together over the slight hotbed, and protected in due course for a short time, and nothing can be more satisfactory than the way in which they root into the Moss, interlacing it in all directions with their fibres, and by degrees entering into the soil of the bed. By the time they are usually removed to their final quarters for the summer, the shallow bed on which they obtained a slight warmth to start with having subsided into the ordinary temperature of the ground, they do not receive the check which they would if removed from a hotbed to the open ground. Without Moss I do not know how this mode of managing bedding plants could be carried out, as on one or two occasions when we were accidentally obliged to use short straw and grass instead of Moss, the difference was so perceptible as to render it easy to pick out every plant not grown in the Moss; the green short grass, especially, being obnoxious to the roots of the plants, although, as it is needless to say, its decay was quick, and its manurial properties are by some held in repute. I must, however, place it many degrees below Moss in point of merit for the purposes mentioned above, and also for all others connected with vegetation with which I am acquainted.

Moss has long been employed as one of the principal ingredients in which Orchids are grown; and though other substances are used, by far the greatest proportion of cultivators employ it in large quantities as their principal medium, and some who have tried more recently-introduced substances have returned to Moss again, admitting its superiority. I, therefore, have no hesitation in strongly recommending Moss as one of the most useful articles on the potting-bench, or, in fact, anywhere. For out-door plants where the chances are that they will not receive at all times artificial waterings when wanted, the open texture of Moss admits more air amongst the roots than is sometimes consistent with their well-being in very dry weather; but

for plants immediately under the eye of the cultivator, Moss suits itself so well to the many conditions in which they are grown, and is in general so much liked by them, that I have no hesitation in pronouncing it one of the most useful substances we have, and in urging its adoption in places where an open texture of compost is wanted. Few plants will be found but what will assimilate to themselves such food as can be supplied in the Moss, for be it remembered, nothing presents a better medium for conveying liquid nourishment to a plant than Moss, and I have no doubt that it will be yet more extensively used than at present.—J. ROSSON.

(To be continued.)

WEIGELA ROSEA FOR A NORTH WALL.

As we are so often compelled, from want of an evergreen creeper suitable for back walls, or other more or less shady situations, to use deciduous and other kinds of plants not very prepossessing in winter, I think many would make use of the Weigela rosea did they know that it will grow, flower, and do well in such situations. It has the advantage also, of growing tolerably fast, so that it does not take so long as is generally supposed to cover a wall of moderate size. I have before stated how very readily it will strike from cuttings. Shoots of last year put in in any form, strike as easily as Willows.

It should, when first planted, have some good compost—say turfy loam and leaf mould, and, if at hand, a little peat, otherwise giving more leaf mould. Cover the wall as soon as possible with the main shoots. This done, take a spade and chop the whole of the roots clean in two, at about 2 feet from the stem, or even less, if well furnished with fibrous roots. This is the main secret for the success of this beautiful plant. I used to suppose the Weigela to be a very shy bloomer, but in reality it is quite the reverse, and so manageable is it that no plant can be forced to flower more readily or freely. Cutting away the roots will induce the stronger stems to break freely, and with the spray the intervening spaces can be readily covered. Digging well round the roots will always prevent over-luxuriance, and at the same time induce the plant to bloom rather later than other specimens more fully exposed to the influences of the sun.—W. EARLEY, *Digswell*.

NEW BOOK.

Cultural Directions for the Rose, by JOHN CRANSTON, King's Acre, near Hereford. London: Houlston & Wright, Paternoster Row.

So wide-spread is the love for the Rose, and so many are they who seek for and need instruction concerning its culture, that anything on the subject is sure to have an extensive sale and to be eagerly welcomed. Mr. Rivers' "Rose Guide" has passed into a ninth edition; Mr. W. Paul's "Rose Garden" has appeared in a new form; and now Mr. Cranston, with a less pretentious but most useful book, reappears with a second edition, improved and enlarged, making a full and clean breast of it—telling all he knows, and making every one of his readers his confidants. The book is divided into two parts. In the first part all the necessary directions for planting, pruning, and growing are given, and at quite sufficient length; while in the second most useful and descriptive lists of varieties suitable for all situations are added, together with those best suited for exhibition, bedding, climbing, greenhouse culture, and forcing, and all this for the small sum of 1s. 6d.

All Mr. Cranston's directions are characterised by plain common sense. Witness, for instance, what he says with regard to the selection of varieties: "The first thing the amateur generally does is to fix upon the varieties he wishes to grow; and for this purpose the catalogue is taken in hand, and those varieties described as being the most beautiful and perfect in form are chosen, without any regard to the habit or the hardiness of the breed, or the nature of the soil in which they are to be grown." The result, as he states, is too often failure, which is often laid upon the nurseryman who supplies them, whereas a little more care or reliance on the vendor would have prevented this. With regard to soil, Mr. Cranston regards the dark black soil of town gardens as the worst, and a rich unctuous loam as

the most suitable. In this he agrees with most Rose-growers, as he does also on the value of the Manetti stock. His observations on pruning are especially valuable. We know so well what is too often done. "I should like my Roses pruned!" In comes gardener with his great pruning-knife; never asks what the Roses are—like quack medicines, the same treatment does for all, and the consequence is failure in too many cases. Now Mr. Cranston takes the various sections, shows how and when they are to be pruned, and the best form to be given to the plant. The diseases of the Rose and the insects injurious to it are also described, although the most destructive of the pests, the larva of the Tortrix—the "worm in the bud"—is omitted.

It would be impossible for us to give anything like an idea of the amount of information contained in this valuable manual; and we have, therefore, only to recommend all who are desirous of successfully cultivating the Rose to seek for the knowledge from one so well capable of giving it as Mr. Cranston.

OBTAINING BLUE-FLOWERED HYDRANGEAS.

In your answer to a correspondent, "J. W. L.," page 458, on obtaining blue-flowering Hydrangeas, you quote from an article on that subject by the late Mr. Beaton, which shows the wonderful sagacity of that person on that as on all subjects upon which he wrote; and though from his writings I could never make out that he had any great practical knowledge of chemistry, still, whenever required he did not fail to indicate that he did possess a certain amount of knowledge on that as on most other subjects connected with gardening, and it will be long ere we see his like again, or one to assume the pen which he has for ever laid down.

I only take up mine to state what experience I have had on the subject of blue-flowering Hydrangeas, hoping it may be of use to some young aspirant to a knowledge of the chemistry of the subject.

Upwards of twenty years ago this question was much agitated in the various horticultural publications, and various were the methods proposed to cause the Hydrangea flowers to become blue. At that time I was always ready to try any suggestion which took my attention or excited my curiosity, and the production of blue-flowered Hydrangeas was one of them.

I have tried iron filings, rusted iron, and soils of all mixtures and colours, and was only successful with one, and that was Norwood loam. It was brought to the place for other potting purposes, and I used some of it for the Hydrangeas, and certainly the flowers became blue; but on using again the loam from the same heap the following year not one became blue, neither by that loam nor any other which I used.

A longer study and greater interest in the science of chemistry has often brought back to my recollection the circumstance of the Norwood loam making the Hydrangea flowers blue one year and failing the next, and I have often intended to investigate the subject, but other avocations have hitherto prevented me from making further experiments.

I shall, however, state, what I understand to be the cause of the change, and perhaps your correspondent may put it to the test of experiment, and let us know the result. The loam had been newly dug out of a deep pit, and used by myself at once. Although I never tried whether the loam contained iron or not in its composition, I think there can be no doubt but that it did, from its colour and consistency, and I am disposed to think that the iron in it, before exposure to the air, was in the state of a protoxide, and soluble in water, and in that state entering into the plant, might cause it to turn blue, while after exposure to the air the protoxide, FeO , would be converted into the peroxide, Fe_2O_3 , by combining with other two atoms or equivalents of oxygen, and being insoluble in water would prevent the iron from entering into the juices of the plant in sufficient quantity to cause the blue. It is also remarkable that Mr. Beaton says, "that cuttings struck in August failed to change colour though grown in iron filings," just, I think, because the iron was only in the state of a peroxide, and insoluble. He also says that by pouring them in strong

yellow loam with a sixth of iron filings, nine out of ten will produce blue flowers." Now, I apprehend the reason of that is, that the yellow loam might have contained the iron in the state of the protoxide, even in smaller proportion, and hence the blue.

It is well known that the colour of nearly all yellow soils is caused by the presence of iron in their composition; and the change which takes place in those soils when turned up to the atmosphere from the pale yellow to the reddish-brown, is caused by the conversion of the protoxide of iron into the peroxide. If the former is present in any great quantity there are few plants that will grow in it. It acts as a poison, but when turned up and exposed to the influence of the atmosphere, it shortly becomes food to the plant.

If those soils which naturally produce the blue Hydrangeas were subjected to analysis it might set the matter at rest; and should any one see this who has Hydrangeas which produce blue flowers naturally, and forward by post, in a close tin box, about a fourth of an ounce of the soil in which the plants grow to my address, I will be able to ascertain in what state the iron is present in it. The soil must be taken from where the points of the roots are. Or, if any one living at Norwood would forward to me the same quantity dug from the solid, 2 feet deep, I would like very well to ascertain if I am right in my conjecture, and I will not fail to let the result be known in this Journal.

There is abundance of the soil here having the iron in the state of a protoxide. All the subsoil is so, and so poor that I do not think that were I to try I could make a Hydrangea flower in it.

If "J. W. L." tries the iron filings I hope he will let us know the result. Although I was not successful with the rust, others may be so. I am strongly of opinion that plants possess a great power themselves, when their roots come in contact with the inorganic matters in the soil, of decomposing the soil, and taking up what they require, and not so much by the chemical changes which we know are ever going on in the soil. Professor Way's celebrated experiments prove that water is not the carrier of food to the plants, only the medium, like the soil, in this important function. Both are necessary, but they must be in their proper proportions; and though the iron in the soil is not in a soluble state, neither is it soluble by adding rust, still the plant may obtain it in that state from the soil when in abundance, and so cause the blue colour of the Hydrangea.

All chemists are aware that when the ferrocyanide of potassium is added to a solution of iron it makes a beautiful blue colour with a considerable precipitate: therefore I do not see that it is difficult to conceive that a plant may have the power of making similar changes from the elements of the soil in which it grows, and so change its colour.—ALEX. SHEARER, *Yester Gardens*.

HOLLAND HOUSE.

THE SEAT OF LADY HOLLAND.

THIS is entered on the right through a splendid pair of gates from the high road between Kensington and Ham-smith, and the beautiful old mansion is seen through the trees seated high in the park, and it is approached by an avenue of Elm trees. The chief parts of this structure were raised by Sir Walter Cope in the year 1607. To the south is the large square bowling-green terrace bounded by balustrades, lately adorned with flowers in vases of Malta stone, and four large Orange trees are in front with a large basin-fountain in the centre. To the east front is the flower garden, a rich parterre, and of a beautiful pattern. The diamond-shaped beds and circles of the chain-beds were chiefly planted with different varieties of *Verbena* arranged according to their colours and shades to give a harmonious effect.

Although the experimental inquiries of Sir Isaac Newton, Sir David Brewster, and other eminent philosophers have proved that the phenomena of colours are regulated in their combination by irrefragable laws of harmony, yet the error of considering the arranging of colours as a matter of fancy merely is very prevalent. Many have likings and antipathies to, particular hues—all have their partialities to particular styles of colouring, some delighting in the gay

and lively, some in the rich and powerful, and others in the deep and grave; the latter may be said to be the prevailing style here. Although the rich and brilliant colours of a Turkey carpet and the gaudy dress of the rustic belle may be agreeable to some, less glaring colours are selected by the upholsterer in furnishing the different apartments of a mansion, and by a lady in the selections for her toilet.

The two larger and two smaller diamond-shaped beds, with a small triangular bed at each end, would require diagrams to illustrate the planting. Suffice it to say that the first group was planted with Tom Thumb and Flower of the Day Geraniums at each side, and there was a brown *Calceolaria* at one end and *Aurea floribunda Calceolaria* at the other. The second group consisted of Tom Thumb Geranium and *Verbenas* Mrs. Maclean, Field Marshal, Reine des Amazones, and Novelty. The other groups contained *Verbenas* Beauty of Hornsey (ilac), General Simpson (brilliant scarlet), Brilliant de Vase, Purple King, Mrs. Kaley, Robinson's Defiance, Mdle. de Nodit, Queen of the Roses, Reine des Amazones, and Lady Middleton (mauve, very fragrant, an excellent bedder, and stands the weather well). In front are eight plantations of some of the best sorts of Roses, edged with broad bands of *Tropaeolum elegans*, *Gasania splendens*, *Oenothera macrocarpa*, and *Verbenas* of different sorts.

The chain-borders on each side of the main walk contained on one side twenty, and on the other seventeen circular beds planted in succession with *Verbenas* Mrs. Trotter, Purple King, Mrs. Kaley, *Gasania splendens*, *Perilla nankinensis*; *Verbenas* Jane, Admiral Dundas, Lady Middleton, Mrs. Holford, Defiance, André, Mdle. de Nodit, Phlox Drummondii; *Verbenas* Mrs. Kaley, Purple King, Firefly, Mrs. Holford, Purple King, Mdle. de Nodit, and Admiral Dundas. On the other side the beds were planted with *Verbenas* Admiral Dundas, Mrs. Kaley, Etonia (violet with white eye), Mdle. de Nodit, Admiral Dundas, Mrs. Kaley, Purple King, Ajax (fine scarlet), Jane, General Simpson, Purple King, Madame de Nord, Mrs. Holford, Lord Raglan, Mrs. Kaley, Purple King, and Evening Star.

The long-pointed triangular beds with scrollwork in Box were edged with *Verbenas* of different sorts.

At the south-west corner of this parallelogram-shaped flower garden are several beds which were planted with *Ageratum mexicanum*, *Geraniums* Tom Thumb and Bijou, and *Verbenas* Purple King, Lord Raglan, General Simpson, Mrs. Kaley, and Firefly.

The next scene is flower-beds on grass. Some were planted with Purple Zelinda Dahlias in the centre, then yellow *Calceolarias*, edged with Tom Thumb Geraniums; others with Baron Hugel Geranium, edged with Mangles Variegated Geranium, a splendid edging; Flower of the Day Geranium, edged with *Lobelia speciosa*; and Miss Nightingale Heliotrope, edged with Sweet Alyssum.

From this, looking south through the arches of the colonnade diversified with festoons of Virginian creepers and of *Periploca græca*, Honeysuckles, Roses, &c., dangling from the top, the fine old Orange trees in rich luxuriance of foliage give an Italian aspect to the scene. These Orange trees may be called the lions of the place, and have been under the superintendence of Mr. Scobie for the last fourteen years, and with what skill they have been treated their fine healthy condition will attest to all who have the opportunity of seeing them.

The vase terrace was furnished with twenty-four vases arranged on the balustrades and on pedestals springing from flower-beds, it was gay with flowers and formed a most pleasing feature. The conservatory is 60 feet long furnished with some fine specimens of Camellias, and in the winter with the large Orange trees that lately adorned the square at the south front. They are magnificent specimens, twenty-four of them being each from 10 to 18 feet in height, and many others were not so large. Attached to the conservatory on the north side is a banqueting-room of handsome proportions, which is finished and furnished in the best style of art and ornamentation. Close to it on the east side is a tower which is approached by a flight of steps, and from the south side of the conservatory is a colonnade about 100 yards long running east, which is continued to the south front of Holland House. By this means a communication, under cover, is opened from the house to the con-

servatory, then to the banqueting-room, then to the loggia, then to the tower, and home either by the flower garden or the pleasure grounds, or by a terrace-walk along the whole length on the top of the colonnade. The flower gardens are seen to advantage when overlooked from the terrace, surrounded by balustrades, on the top of the banqueting-room.

The ground rises on all sides to a beautiful knoll in the park. This knoll is crowned with a most picturesque group of Cedars of Lebanon. Other trees creep up the slopes and form groves around the base and along the valley, not thick groves of gloom, but groves in which the forms of the trees are fully developed, and the trees being planted at various distances apart produce glades of pleasing landscape scenery.

The house is surrounded by pleasure grounds so nicely connected with the park, that a beautiful and varied landscape is produced, bounded by deep shady groves that form the framework of this delightful picture.—W. KEANE.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE December meeting was held on the 6th inst., F. Smith, Esq., the President, being in the chair. Amongst the donations to the library since the November meeting were the publications of the Royal and Linnean Societies, the Royal Physical Society of Edinburgh, the Moscow and Stettin Society, the continuation of Lepp's great work on European Lepidoptera by Snellen Van Vollenhoven, a remarkable memoir by Mr. Edwin Brown on the genus *Acentropus* now proved to be a Lepidopterous insect, articles on fauna and garden insects by Mr. Wilson, of Adelaide, &c.

Mr. S. Stevens exhibited a box of Coleopterous insects collected in the Zulu Country, South Africa, by the Rev. M. Girard, including many very rare and interesting species; also, a curious variety of one of the British blue Butterflies, apparently intermediate between *Polyommatus alexis* and *P. adonis*, taken in the Isle of Wight.

General Sir J. B. Hearsey exhibited a case of nocturnal Lepidoptera collected by himself in India, containing many very fine and large species of Geometridæ and Noctuidæ, several of which appeared to be undescribed.

Professor Westwood stated that the Rev. Henry Bowley, one of the clergymen attached to the Oxford and Cambridge Missions to South Africa, had forwarded a small collection of Lepidoptera and Coleoptera from the Zambesi to the Museum at Oxford, containing many rare species, which appeared to be very similar to, if not identical with the insects of Mozambique, collected by Peters, and described by Klug, Schaum, Hagen, &c., in the voyage of that traveller. He also exhibited a remarkable manuscript entomological calendar or journal kept during a long series of years by the late Mr. J. Curtis, containing about two thousand notes and observations on the habits, times of appearance, &c., of insects chiefly injurious to the farm and garden, man, domestic animals, orchard and forest trees, &c.; also, a manuscript report of one of the meetings of the Norfolk and Norwich Entomological Society, held in the year 1812, containing among other entries the admission of the Rev. Mr. Kirby into the Society on his own request. He also exhibited and described two very curious small Beetles captured in the Canary Islands by Mr. Vernon Wollaston, remarkable for the large size of the heads of the males in both species, and forming the types of two new genera.

Mr. W. Wilson Saunders exhibited specimens of a new and very pretty species of Bryocoris, a genus of Plant Bugs, which had attacked the leaves of some of his Orchids (especially plants of the genus *Catasetum*) in the same manner as the Thrips; but being provided with wings and very active they made their escape on the slightest alarm, and flew off to other parts of the hothouse, returning, however, to their food plant after a short time.

Captain Cox sent for exhibition a series of very beautiful representations of Moths and Butterflies, which he had executed by photography, and which represented the most delicate markings of these insects in a very exquisite manner.

Another illustration of the use of photography in the delineation of insects was shown by Mr. W. F. Kirby, in the recently published memoir on the Trypetidae by Dr.

Loew, in which the elaborate and intricate markings of the wings of these insects were represented of a gigantic size.

The President gave an account of an examination made since the last meeting of the nest of the small Honey Bee of New Holland, obtained from Queensland by Mr. Woodbury, and now belonging to the British Museum. On removing the side of the box in which the nest was built, not fewer than four or five hundred dead working Bees were found. The cells were of an hexagonal form, built into regular combs, and, like those of the common Wasp, with the mouths of the cells downwards. This peculiarity of position, unlike that of the cells of our common hive Bee, was connected with the facts that the cells served only as cradles for the brood, and that the honey was stored in oval cups, or honey-pots, of which there were as many as two hundred and fifty at the foot of the nest, as in our British Humble Bees. Some account was given of the nests of other species of Meliponæ and Trigonæ, from the writings of Guérin-Ménéville, and Gosse. The material of which the cells and combs were constructed did not appear to be wax, but rather a resinous kind of gum, which, according to Mr. Woodbury, ignites instead of melts, as is the case with common wax.

Mr. Wilson, of Adelaide, South Australia, sent some specimens, accompanied with notes on the habits, of the larva and perfect state of *Calosoma Curtisii*, one of the most beautiful species of the genus, which, unlike our northern species, which are found in Oak trees, was generally met with under cowdung.

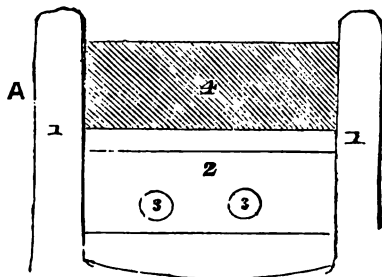
Mr. McLachlan read some notes of the type specimens of the species of Phrygnæidæ, described by Fabricius, contained in the collection of Sir Joseph Banks, now forming part of the British Museum.

WHICH IS THE BEST WAY OF HEATING BEDS BY HOT-WATER PIPES?

I THINK this subject will be the better of a little ventilation; and, therefore, by your permission, I will place it before your readers, in the hope that some of your practical friends will answer the above question, and give the result of their experience in your pages.

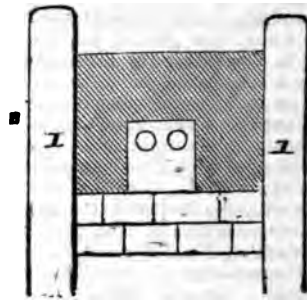
We are all aware that the use of hot-water pipes is intended to dispense with that of manure or other decomposing substances, the object being to raise the temperature of the soil sufficiently to induce seeds to germinate, and to encourage the growth of plants at unnatural seasons. Now what is the best position for the pipes to be placed in connection with the bed which they are intended to heat? How should they be placed so that they may impart the greatest, and at the same time the most equable temperature to the soil of the beds?

The following are the modes generally used by gardeners: First A. This appears the most general.

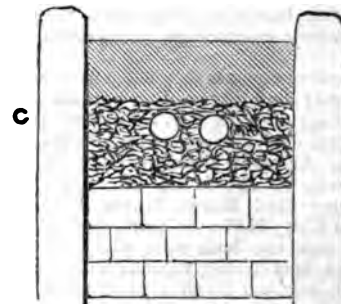


1 and 1 are walls, between which is constructed a chamber 2, having two hot-water pipes 3, 3, which pass through it without touching top, bottom, or sides; but are intended to heat the chamber sufficiently to impart warmth to the bed 4, which rests upon the flag or slate flooring above the pipes. This method has always appeared to me objectionable because there is a great waste of power. A great amount of heat must be expended on the side walls and vacant space in the chamber. The idea is, that as heat will

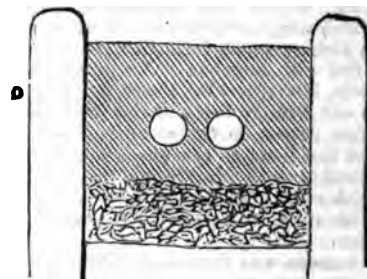
fancy that but little remains to rise after the work is first to do below.



The next method is B, in which 1 1 are the walls, and may be considered better than A, inasmuch as the action is more direct, but yet liable to a certain consumption of heat by the surrounding air.



C is a nearer approach to direct communication between the pipes and the soil; but a medium in the shape of a layer of broken stones or bricks still stands between them; it appears to me that they will absorb a considerable portion of the heat before they will permit any to pass without paying a heavy toll. It may be said that broken bricks or stones act as drainage for the bed above them; but if this is so, I question whether they would be more properly placed below the pipes, for in that position they would have a tendency to draw the roots of plants above to that part of the bed, which, being near the pipes, would be the warmest. I, therefore, raise the question whether the best and proper place for the pipes is not through the soil of the bed itself as shown in D.



Here in D we have direct action. Nothing but the soil can absorb the warmth from the pipes. Nothing can receive the imparted heat for so long a period as the heated medium, and we dispense with the agency fee of any intervening medium. This appears to me to be the surest way of making a hotbed; no one would ever think of heating a tank cistern by running the pipes through a chamber below instead of through it; I may be told that it might injure tender roots if they came in contact with the pipes. I venture to doubt, because in clearing out a bed recently noticed that the roots of some plants had struggled to their way to the warm pipes through a superincumbent layer of rubbish. I have sufficient faith in nature to believe the roots will not willingly go into danger, and that like a burnt child, which dreads the fire, they if their feelers

the place too hot to be pleasant, will strike out in another direction; indeed, if they did get singed or burnt by venturing too near to their warm friend, might I not, in these days when root-pruning is the fashionable treatment, be right in assuming that the process by cautery is superior to cutting?—W. W.

ROYAL HORTICULTURAL SOCIETY.—In the conservatory at Kensington there is now suspended a bunch of Bananas of extraordinary size. It was grown by Mr. J. Carr, gardener to P. L. Hinds, Esq., of Byfleet, Surrey, and was produced by a small plant imported from the West Indies in September, 1862. The plant was grown in a tub, and was only 4½ feet high when it bore the bunch, which is itself about 3 feet long, with a stem as thick as a man's wrist, the whole weighing 86 lbs. As yet only the fruits at the base of the bunch are ripe, those at the opposite extremity or further from the plant when growing, are as yet green. We believe it is intended for presentation to Her Majesty.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE various operations of draining, trenching, and digging, to be carried on with vigour, and the ground if naturally heavy to be laid in ridges. When frosts occur the ground that has been ridged would be benefited by turning over the ridges with a fork, and if deeply frozen, with a mattock, the more fully to admit pulverising and vermin-destroying action to all parts of it. The planting of vegetable crops should now be merely confined to a few sorts of Cabbages, Coleworts, and late Celery for soups. The hoe may be used occasionally in dry weather with advantage, to destroy weeds between the rows of vegetables, and to draw earth to the stems of Cabbages, &c. The *Potato Onion* is a most productive crop. The small offsets to be planted in beds 4 feet wide, four lines (not drills) to be drawn 10 inches apart on the beds, the offsets to be placed upright, slightly pressed into the soil, and covered with an inch or two of leaf mould, or any light soil; when they appear above ground, to be earthed-up on a fine day. They will be ready to take up in the latter end of June to succeed the August-sown ones for use. A dressing of fresh loam is, in many cases, preferable to manure for land that has been long cropped with vegetables, and where it is wanted and can be obtained, it should be made ready in order that advantage may be taken of frosty weather for heavy wheeling. Where fresh soil cannot be obtained, charred vegetable refuse, such as prunings of shrubberies, edgings of turf, and many other things that may be collected for the purpose, will form an excellent substitute, and there are but few gardens that would not be improved by a dressing of charred vegetable matter.

FLOWER GARDEN.

The work of the flower garden and of the pleasure ground will now consist in finishing, if mild weather continue, the planting of shrubs, trees, bulbous roots, and hardy perennials and biennials. Complete the planting of Roses, if not done already, and if there is not sufficient time for trenching the ground 2 feet deep, a large hole of that depth to be made and filled up with some good loam and well-rotted horse-dung. Be careful when planting that the stem is not buried too deeply, as a trifle lower than the depth it was planted before will be sufficient; the roots to be spread out regularly, and when covering them the soil to be pressed around them gently with the foot, then stake to prevent the wind from loosening the plants at the neck. If the budding of Roses is intended in July, the stocks should be procured and planted while mild weather lasts, the brown-backed to be selected in preference to the green-backed; plants of the China or other tender varieties to have a little moss tied round them for protection from frosts. If there is any other tree, shrub, or plant that the experience of past seasons has proved to be susceptible of injury from frosts or the inclemency of the winter weather it should be protected in good time. Hoeing and raking the borders amongst shrubs will be sufficient to give them a clean and neat appearance without the use of the spade, to which we

have a great objection, as it cuts the fibrous roots and weakens the growth of shrubs that were planted to be ornamental for pleasure-ground scenery.

FRUIT GARDEN.

Although we consider November the best month for planting fruit trees, if through any of the many causes of delay such operations were not carried into execution, we would strongly advise all to set about such work as soon as possible, and to finish it while open weather lasts. If only an improvement in the soil is thought necessary, loam and leaf mould are the best for the purpose, and as a makeshift for drainage to raise it as much as possible where the trees are to be planted. When transplanting, the trees to be taken up with care, any broken, bruised, or long straggling roots to be pruned with a clean cut, and when planting to comb them with the fingers to spread them regularly in the holes, which are to be of moderate depth, and of more than sufficient width for the extent of the roots. The fresh soil to be shaken over them carefully, and gently pressed down (not stamping with the feet) all round, the trees to be then watered and mulched, trained to the wall or espaliers, or if standards, to be firmly staked. Make a point of examining every week all choice fruits that are approaching ripeness, or are found not to be keeping well, so that everything may be used at the proper time, for some of our best Pears are worthless enough if allowed to get over-ripe before using, and the same is the case with many varieties of Apples. Also, look over the whole stock when time can be spared, removing any that exhibit symptoms of decay, and putting them aside for immediate use.

GREENHOUSE AND CONSERVATORY.

Give air freely, but not in currents, when the weather permits; use water very sparingly, always tepid; apply fire heat occasionally in the day, with free air to dry up damp. Chinese Azaleas and Camellias to be kept cool, the forward plants to be pushed on with a little heat to expand their flowers properly. Shift on *Calceolarias* and *Cinerarias*. Supply water to the *Heaths* and *New Holland* plants that are coming into flower more liberally than to the others. Assist the early *Pelargoniums* with a little heat, but keep the summer plants cool and airy. Keep Chinese *Primroses* near the light and air, and water cautiously. Orange trees or any other plants that have not been recently potted to be fresh surfaced, by removing a little of the top soil and supplying its place with fresh. When the *Chrysanthemums* begin to fade they may be removed to the north side of a wall, the pots plunged in old tan, leaves, or saw-dust, to protect them from the severity of winter.

PITS AND FRAMES.

Plants in these structures to be kept as dormant as possible, with the admission of air at all favourable opportunities, and a little quicklime carefully sprinkled round the pots to absorb moisture, and in some measure thereby to prevent them from fogging-off. If a severe frost sets in, when it will be necessary to cover them up to the exclusion of light and air for some days, when a change in the weather takes place, the precaution of shading them for a few days should be taken to inure them gradually to the glare of sunlight. Means of protection should now be ready, for if postponed until a sharp frost sets in, all will be hurry and confusion, and the labour of months and the hopes of a rich display next season may be destroyed in one night.

W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

ONE of the great difficulties connected with gardening in England is to be found in the extreme changeableness of the weather. Many a man who attends to these changes will prove himself a good gardener, though knowing but little of science. Many a man with the knowledge of a philosopher will fall into trouble because such little matters are beneath his attention. We shall never forget a gardener coming into a lodge of young gardeners, with bull's-eye lantern in hand, and asking a clever fellow, absorbed in the pages of a thrilling romance, "Why is it there is no fire in the conservatory?" "Is there any frost, sir?" "Well, I did imagine you had something in the way of eyes, hands,

and feet!" Just fancy, a mild day, and now a little before ten at night a very sharp frost, the waterbutts covered with an inch of ice, and the poor fellow tearing about and up half the night to make the conservatory safe, and no thanks, but the reverse, for all his trouble. The use of his eyes early in the evening might have saved him all the night work, allowed him to dream pleasantly of the charming heroine of the novel, and enabled him to have escaped a scolding, which was a mere trifle to the want of confidence thus engendered.

These sudden changes involve not only the exercise of attention, but also a considerable amount of extra labour to secure the means of safety. We have lately had some beautiful dry weather, with a barometer too high to expect much frost or snow. On Tuesday morning the glass fell a little, and we had a smart rain, too much for out-door labour, and we had just made preparations for having a viney washed and cleaned when down came a heavy shower of snow, and shortly afterwards the glass moved up a little, the sky became clear, the sun shone brightly, and out of the sun the ground was frozen the whole of the afternoon. From the vagaries of the thermometer we had no idea of a continued frost, but still there was a chance of a sharp frost for that night, and, therefore, everything tender was protected. We were convinced by the time the sun was set that the frost would not continue, from the yellowish cast of the sky, and later, from a halo round the moon and the veering of the wind to the west—circumstances which, if they had taken place sooner, might have induced us to have used less protection, and more especially as the moon being about the full there was more chance of the air being clearer in the evening than in the morning. We were not surprised that there was a considerable change in the morning, permitting of everything being uncovered early. But suppose we had covered none, there are many things that with mere glass protection would have given us no more trouble, except moving them to the rubbish-heap. The only benefit we derived from noting the changes was using only a little fire heat, instead of a strong fire, which might have been given if these changes had not been noted; and being convinced more still if that were necessary, that for merely keeping out frost from small places nothing is so economical as a small stove inside the house. The weather has been first-rate for wheeling, and, therefore, the kitchen garden has had a fair dressing of burnt earth, and what manure and materials could be spared from the rubbish-heap. In dry weather at this season it is better to wheel than on mornings which are frosty, as the wheel moves much more easily and gets no incrustation, and even on lawns there is less of marking left. We have noticed that grass wheeled over when very frosty afterwards looks as if it had been charred, and the marks remain a long time.

We have found our compost-heap consisting chiefly of the clearings from the flower garden, a few tree leaves, and a little horse-litter most useful. They were thrown up, well mixed, and the decayed flowers of *Calceolarias*, *Verbenas*, &c., gave enough of moisture to cause the whole to heat nicely, and yet to keep bulk well, and that without any turning. The whole has been used for making up a bed for a frame in which Early Ash-leaved Potatoes have been planted, also, for another bed for early Carrots; and a deep earth pit has been filled and planted with Potatoes, as we can lay old sashes across it. The soil employed is that which has been used for Melons and Cucumbers, a little slaked lime and leaf mould being added. About 5 inches of soil is placed on the bed, the started Potatoes placed in rows, and 5 or 6 inches of soil placed over them. Sometimes this is left in ridge form, but, as in the frames, more generally flat, in order that Radishes may be sown between the rows. In planting, unless the Potatoes have been forwarded in small pots, which is a capital plan to make them tuber early, it is as well for the shoots of the sets not to be sprung more than 1 inch, as when larger and the roots are freely growing they are apt to receive a check. Planted out also some in pots, two sets in 16-sized pots, about 8 inches in diameter, and placed them in a pit where a little dry heat could be given as well as a mild bottom heat. We have had them good at Christmas by this mode, and one advantage of having them in pots is, that they can be moved and placed under a little protection as soon as the tubers are full grown.

Placed, also, a number of sets in 48-sized pots. When the stems attain some size the pots and part of the stems will be plunged in a slight hotbed or leaf mould. The confinement of the roots causes tubers to form more quickly than where more room is given. We find that all these things do better after the shortest day has passed than before; and, therefore, a week or two at this season is not of so much consequence. To have nice new Potatoes at Christmas, the sets of early Potatoes should be kept, well greened in a sunny spot in summer, and planted in the end of September. Then the young Potatoes will be good. Those who are fond of young waxy Potatoes may have them easily all the winter with much less trouble. For instance: save a lot of the crop of 1863 over 1864, pick them of all sprouts in spring, and keep the tubers as dry and cool as possible over the summer. In September and onwards place these old tubers in rather dry soil, leaf mould, &c., in a dry place, put them in layers, covering all over with some 6 inches of soil, and during the winter, though a single stem never appears, very fair-sized waxy tubers may be obtained. We have frequently passed them off as early Potatoes, and they have been approved of because they were new Potatoes, though possessing but few of the best qualities of early Potatoes grown in a frame or a pit, with the foliage exposed to sun and air in the usual way.

Sowed Radishes also over the Carrot-box. We know of nothing more economical than a two-light early Carrot-bed, the Carrots are so nice, and the Radishes are all gone before the Carrots have grown to any size. The Radishes should not be thick, and if the Carrots are thinned chiefly by pulling the largest for use, there seems to be no end of gathering. Gave plenty of air in favourable weather to early Radishes, Lettuces, and also to old Lettuces, Endive, &c. Sowed a few more Kidney Beans, and among them a few of the Newington to be cooked whole if it is so desired. Packed-up Artichokes, Celery, and run a layer of burnt earth and charred rubbish along the sides of Cabbages and autumn-planted Savoy. Placed, also, a little of the same, and some rotten dung over Asparagus for the winter rains to wash through, and proceeded with digging, trenching, &c., as the work could be done. For Mushrooms, Sea-kale, &c., see last and previous weeks.

FRUIT GARDEN.

Looked over bunches of Grapes, as one berry going will soon give you three or four, and they will soon make a wreck of the bunch. To prevent damp put a little fire heat on every morning with air, and in mild weather allowed it to go out in the afternoon. Generally leave a little air at back unless when frosty. Prepared for clearing and washing middle viney on a wet morning, but left it as the weather became fine. Some of the Vines from excessive cropping for many years have become a little weak, and we have placed four young Vines by the side of the old ones, after removing carefully a portion of the old soil and furnishing with fresh for the young plants. This is a sort of makeshift, but when the old plants can be better spared (and the young ones, if not quite to our mind), they can be raised and a fresh border given to them. These Vines are all planted outside and brought through holes in the front wall, and we cannot help it without changing the whole interior arrangements. Partly from the twist that must thus be given to the stems, there has been a tendency in the latter to throw out lumps of cellular matter, and that we think has encouraged the nibbling of mice, and these as well as the excessive crops have lessened the usual vigour of the Vines. The pieces of fresh soil will also encourage the old Vines, and by rearing some strong Vines in pots, we will make sure of doing all fresh next season if not fully satisfied with the makeshift. We watered the roots of these Vines, as soon as laid out and covered, with warm water. Used soil in a nice, friable, mellow state, and covered the ground with a foot of hot leaves, and a covering to keep dry over all, so that the roots will be a little excited before the tops receive any heat, some six weeks hence. Turned over the litter on the border of a first viney, placing about 6 inches of leaves, a little warm, next the soil, and the old on the top, making in all about 15 inches. The heat in the border a few inches from the top was about 60°, and these few leaves will raise it we think to 70° or 75°. At a spot beneath the

surface it will be from 55° to 60°, and in a week or so we will start with a little fire heat.

Figs in the house we are keeping cool and rather dry, and will not prune until growth commences. Every available inch beneath them is covered with bedding plants. We will move some Fig trees in pots, and most likely a few Peach trees in pots into the firstinery; and if there should be any vacancy from planting young Vines, the place can be filled up with Vines in pots. A number of these that have been plunged for some time in a mild heat in an earth pit have been plunged again after the bed was turned, a bank of horse-droppings placed inside in front of the pit, and glass sashes laid across, and but little air given. The insects must have a wonderful constitution if they escape the steams from the horse-droppings. As these Vines come forward a bit we will remove them to where they can have a dry heat. Kept moistening the Vines in pit, which seem to be beginning to move, the place beneath being supplied with Dwarf Kidney Beans in bloom and swelling. Another pit which is 6 feet in width, with a smaller pit in front for Cucumbers, Melons, &c., stands well for the sun; and there is a shelf at the back on which Black Prince Strawberries are placed. Between the back wall and the narrow pit in front is a narrow pathway. We wanted to have three or four rows of Strawberries in front of those on the shelf over the pathway and the bed. And now, to manage it in the easiest way. Some old larch poles were found. These were cut so as to go across from pole to wall on the same slope as the glass, and about 16 inches from it, the end of the poles being sloped likewise, so that as they pressed against the wall the more weight placed on them the firmer they would be. These poles formed the rafters for temporary shelves laid longitudinally across them, and a small wedge of wood placed on the pole in front of the shelf would keep it level. These poles, the shelves being removed, may be taken away in a few minutes to form the groundwork for a stage in any other pit of a similar size; and thus Strawberries and anything else may be brought as near the glass as it is desirable. In the present case, as we will only use three or four shelves at present, the pit will continue to be filled with other things. We do not think of any more simple plan at present; and we allude to it more prominently, as an inquiry has been made whether such a pit might not be filled with leaves to the requisite height and slope, and the Strawberry-pots set or plunged in the leaves. We say No, for two reasons. First, by our plan, the pit being heated, there will be a greater circulation and a greater body of air about the plants; and secondly, because when Strawberry-pots are kept plunged at this season they grow too much to foliage. Even in such a professed bed of leaves we would prefer the pots to stand on boards. Those we have set on shelves (temporary ones), have been brought from a frame in which they have stood a few weeks, as noticed last week; and there is nothing between the bottom of the pots and the board but a little moss. It is not likely they will fruit there; but if they did, the pots would be thinned, and a little leaf mould placed over the moss, or most likely a thin piece of turf with the earthy side upwards, would be used instead of either.

Proceeded with pruning, nailing, &c., as opportunity offered. Put in cuttings of Cucumbers, and sowed a few seeds; as several times stated, the leaves of those bearing now cannot have too much light. The temperature at night should be moderate, not to excite them too much—say about 60°; and it is important where length of fruitfulness is desirable that the plants should be allowed to fruit sparingly; one fruit now will be more exhausting than four after the middle of March. Where Melons are wanted early, seeds should now be sown.

ORNAMENTAL DEPARTMENT.

See last and previous weeks, and Mr. Keane's specific directions as to stove, forcing-pit, &c. Where you have plenty of room large lumps of Lily of the Valley may be placed on the floor of a forcing-house; but if you want very fine pots you must disentangle the roots, and use only plants having nice, firm, plump buds, and cram these closely together. These will do in any forcing-house; but they will do better if you can give them a little bottom heat for a few weeks, whilst the buds are kept rather cool. With bedding plants, where there is no fire heat, the great enemy

will be damp, and the Verbenas and the finer Geraniums will be the first to show it. Calceolarias will stand a good portion, and seem to like it; nevertheless, after the frost of Tuesday, we had all the lights off on Wednesday, in order that plants and surface soil might be well dried, as, in such changeable weather, it behoves us to be prepared for a continued frost, whether it come or not. All plants in windows should be watered sparingly; and our friends will be pleased to recollect that every bulb they use for window or room decoration will bloom better by having made abundance of roots before the leaves or the flower-stems appear. No place is better for starting Hyacinths, &c., for glasses or pots than a dark cool closet. The more the vessels are filled with roots before the stem appears the better will the bloom be.—R. F.

COVENT GARDEN MARKET.—Dec. 28.

The great market of the week was on Christmas eve, when a brisk trade was done, but the supply being equal to the requirements of the season, prices were not affected. To-day, though there is plenty of everything, but little is done in the way of business. Hothouse Grapes are rather more scarce, and in Apples and Pears no fresh varieties have made their appearance; indeed, owing to the early ripening of the late kinds, such as Beurré Rance, Ne Plus Meuris, and Easter Beurré, these are now fit for use, and after they fall Pears may be considered as over. Cut flowers are plentiful and meet with a ready sale. Pelargoniums, Orchids, Acacias, Camellias, Chinese Primulas, Early Tulips, Roses, Violets, and Mignonette, are the principal.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	1	6	4	0	Mulberries quart	0	0	0	0
Apricots doz.	0	0	0	0	Nectarines do	0	0	0	0
Figs doz.	0	0	0	0	Oranges 100	4	0	10	0
Filberts & Nuts 100 lbs.	60	0	90	0	Peaches do	0	0	0	0
Grapes, Hothouse... lb.	5	0	8	0	Pears bush.	8	0	12	0
Foreign 1	0	2	0	0	dessert ½ sieve	2	6	0	0
Muscats 6	0	10	0	0	Pine Apples lb.	3	0	6	0
Lemons 100	6	0	10	0	Pomegranates each	0	2	0	0
Melons each	3	0	5	0	Walnuts bush.	14	6	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Asparagus bundle	6	0	10	0	Leeks bunch	0	3	0	0
Beans, Broad..... bush.	0	0	0	0	Lettuce score	1	0	2	0
Kidney 100	3	6	5	0	Mushrooms pot	1	0	1	6
Beet, Red doz.	1	0	1	6	Musd. & Cress, punnet	0	2	0	0
Broccoli bundle	0	9	2	0	Onions bushel	2	0	4	0
Brussels Sprouts, ½ sieve	1	6	2	6	pickling quart	0	6	0	0
Cabbage doz.	0	9	1	3	Parsley bunch	0	3	0	4
Capicums 100	1	2	2	0	Parasnis doz.	0	6	0	0
Carrots bunch	0	6	0	8	Peas bush.	0	0	0	0
Cauliflower doz.	2	6	4	0	Potatoes sack	0	0	0	0
Celery bundle	1	6	2	0	Radiates doz. bunches	1	6	2	0
Cucumbers each	0	9	2	0	Rhubarb bundle	1	0	0	0
Endive score	1	3	2	6	Savoy per doz.	0	9	1	0
Fennel bunch	0	3	0	0	Sea-kale basket	1	6	2	0
Garlic and Shallots, lb.	0	8	0	0	Spinach sieve	1	6	2	0
Herbs bunch	0	3	0	0	Tomatoes ½ sieve	0	0	0	0
Horseradish ... bundle	1	6	4	0	Turnips bunch	0	3	0	0

TO CORRESPONDENTS.

* * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 162, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

PRICKLY PEAR SEED (Lx).—Fill some pots three parts full of crocks or broken pots, and over them place an inch of sandy loam, one-half of which should be pieces of pot the size of pigeon beans or peas. Sow the seeds and cover lightly, not more than the diameter of the seeds, with sand. Place in a gentle heat, and be careful not to water oftener than is necessary to keep the soil moderately moist. When the seedlings are fairly up remove them to the greenhouse, and keep them near the glass with the full sun over them. They will require moderate waterings during summer, always taking care to keep the soil dry rather than wet; but moderate moisture suits them best. In winter they need no water beyond a little occasionally. In bright weather to keep them from shrivelling. When the seedlings are sufficiently large to handle pot singly into small pots, using a compost of sandy loam half, and broken pots and pieces of charcoal the size of a hazel nut the other half. The drainage should occupy one-third of the depth of the pot, and if the pot is double the diameter of the plant it is a proper size. After the plants become established, standing them out of doors in a sunny situation from June to September is better than keeping them continually under glass. A temperature ranging from 45° to 50° suits them in winter. They are very easily cultivated, all the care needed is to prevent the soil becoming sodden about them, which causes the roots to decay, and rots the stem. We should like to know if any one has succeeded in obtaining from this plant (*Opuntia vulgaris*) fruit in this country worth anything and under what treatment. Ours were always insipid.

AMARYLLIS CULTURE (A. S. D. G.).—Your treatment is all right so far; and now if you could plunge the pots in a bottom heat of 75°, keeping the atmosphere 10° lower for a fortnight, you would have no trouble in bringing the roots to the sides of the pots, providing the soil was kept moderately moist. After that they should be kept in a temperature of 60° by night, with a rise of 15° with sun and air. Water freely until the leaves attain their full size, then gradually withhold the water, and give three months of rest at the dull period of the year. *Amaryllis Johnsoni*, *A. Johnsoni* major, and *A. Prince of Orange* require the above treatment. *A. longifolia rosea* does not require so much heat as the others, neither does the *Jacobina Lily*. A rather warm greenhouse is the best place to winter them in; and a vinery is very suitable when growing. In other respects they all require the same treatment. We are promised an article on the cultivation of this family.

CINERARIAS FROSTED (G. S., Dalkeith).—Your *Cinerarias* will certainly be injured in their flowering by becoming frozen. Keep them near the glass, and give abundance of air, thus encouraging sturdy growth. They may possibly recover so as to flower well, though not so well as if they had not been injured.

HELIOTROPES FOR WINTER (Idem).—For this purpose we prefer plants which have been struck in spring and grown on during the summer, as you propose doing with seedlings. Cuttings flower more freely than seedlings, and on that score alone we prefer them. Seedlings, however, do moderately well for winter blooming, and are stronger and not so liable to damp off. At the same time they are shy bloomers, and are not always worth growing. Cuttings struck in March will better answer your purpose. All they need is frequent repotting, and pinching back the shoots in order to make them shapely. The blooms should also be nipped off during the summer until September. After that they will flower freely if kept in a warm greenhouse.

PLANS OF FLOWER GARDENS (C. B.).—There are no plans of gardens published in a separate form. There are a hundred spread through the volumes of this Journal.

TREES TO REPLACE CHESTNUTS ON A DRY SOIL (E. Hicks).—We should think the dry rocky soil you describe would grow Walnut trees, which are both handsome and useful, though by no means the most proper by a public road. The common white flowered *Acacia* would also look well, and we are not certain but a Birch would do well in such a place, though not better than a Beech, and if you liked to have the purple-leaved one it would do. Most of the newly introduced trees are of the Pinus tribe, and as you object to evergreens, they are not admissible, and it would not be advisable to plant any but robust-growing trees of known hardiness. If you wanted three trees differing widely from each other, and at the same time ornamental, plant a white-flowered *Acacia*, a scarlet-flowered Horse Chestnut, and a purple-leaved Beech. They are all hardy fast-growing trees. It would, however, be advisable to exchange some of the soil which the roots of the late trees have been occupying for other fresh soil before planting anything.

HARDY EVERGREENS (A. J. G.).—The commonly-called *Alaternus*, is in the *Cottage Gardeners' Dictionary*, under the botanical name, *Rhamnus alaternus*. *Griselinia lucida* or *littoralis* is a plant introduced since the *Cottage Gardeners' Dictionary* was stereotyped, but will be found in the "Supplement" about to be published. *Eugenia Ugni* was supposed when first introduced to be tender, but in most situations it is now found to be hardy, and the same observation applies to the other two plants you mention.

VARIOUS (C. T. H., Dorset).—There is no better *Tropæolum* than *elegans* in its own shade of colour; Brilliant is darker but not better; Tom Thumb (yellow), is fine; and so is Pearl, but the flowers are large like a common *Nasturtium*. We know *Pinus insignis* will certainly succeed near the seacoast, and we know of no reason why *P. austriaca* should not do so.

INSECT ON LAUREL LEAVES (H. F. Hamilton).—We are not aware of any insect which gnaws the leaves of the Laurel. Possibly the mischief is done during the night, and the culprit might be caught by examining the trees with a candle after dark.—W.

ALLAMANDA NERIIFOLIA TREATMENT (A South-Eastern Subscriber).—Keep the plant dry at the root, giving no water except a little occasionally to keep the stems fresh. From now to the middle of March it will do well in a temperature of 45° to 50°, providing the atmosphere be kept dry. In March cut out the weakest shoots and prune the strongest back about half their length if it is a young plant, but if it is large and the wood well ripened, the shoots may safely be cut back to the second joint. About a fortnight before this or the beginning of March, repot the plant, taking away as much of the old soil as can conveniently be done without injuring the roots. Drain well and use a compost of turfy loam half, leaf soil one-fourth, and well-rotted manure one-fourth, with a liberal admixture of sharp sand. If the plant is young omit the manure, supplying its place with turfy loam. When the plant shows signs of growing cut it in as mentioned before, and be rather sparing of water until growth fairly commences, when liberal waterings are required. Abundance of light and air, with copious syringings are requisite. After February the temperature should range from 55° to 70°. This plant is the hardiest of the *Allamandas*, and deserves more extended cultivation on account of its giving a colour much wanted for effect in conservatory decoration in summer and autumn.

CISSUS DISCOLOR (Idem).—You are quite right in keeping dry at the root. Continue to do so until March, but do not allow the stems to shrivel through excessive dryness. Water must be given to prevent this, and it is wonderful how little is necessary to do it. Pot in March, and place in gentle bottom heat if you have it, and you will be surprised how kindly the buds break in comparison to those not so stimulated. It requires a temperature of 55° to 65° in winter, and from 65° to 80° when growing.

CINERARIA LEAVES CURLING (A Subscriber, York).—The leaves curl through a contraction of their tissues, which is mostly caused by insects sucking out the juices of the leaves; but keeping the atmosphere too dry induces hasty evaporation from the leaves, and this causes them to curl up. Too high a temperature at this season is also the cause of the leaves curling, for it induces growth at a time when there is not sufficient light to perfect the growths made. Give abundance of air, keep near the glass, and discontinue the regular watering, giving water only when the plants need it; but do not let the leaves flag from want of it. Do not water, however, until they need it, then give enough to run through the pots. See that the drainage is all right, and watch narrowly for the appearance of the green fly.—Va.

ARRANGEMENT AND PLANTING OF VINERIES (A Dumbartonshire Youth).—Your arrangements are very good. You will have plenty of heat in the late house, and so you will in the early one, if you do not commence until January, especially if you take two pipes round the end next the boiler. If you think of beginning earlier, you had better have two pipes at the other end likewise. We would plant as follows, according to your own selection:—*Early House*.—Prolific Sweetwater, Black Hamburg, Bowood Muscat, Mill Hill Hamburg, Canon Hall Muscat, Muscat of Alexandria and Damas Violet. *For Late House*.—Victoria Hamburg, Mu-cat Hamburg, Royal Muscadine, Lady Downes, Chasselas Musqué, and Black Prince.

NAMES OF PLANTS (Violet).—No. 1, is one of the Holly-leaved plants Berberies, probably *B. repens*; 2, is some *Passiflora*, it is impossible to say which from a single starved leaf. (*T. P.*)—1, *Epaoris purpurascens*. The others are garden varieties which you can much better name at the nearest nursery than we can without a collection of the plants at hand for comparison. 2 has the features of *E. grandiflora*; 3 and 4, of *E. impressa*.

POULTRY, BEE, and HOUSEHOLD CHRONICLE

RELATIVE ENTRIES—BIRMINGHAM SHOW.

THE various reports of the great congress of poultry seem to prove that this Show has been eminently successful. True, there has been a very unexpected exhibition on the part of one of the Judges—one, which possibly will yet form the subject of further steps. Our "old mother" would appear to fancy herself "perfection." She, certainly, has been most successful; but, as certainly, I would take exception to the opening paragraph of the "Regulations," "No additional prizes or medals will be awarded, the extended classification now adopted rendering any departure from the prize list in this respect unnecessary." The italics are mine.

Now, in the analysis of the relative entries at this monster Show, a difficulty arises at the outset. The method of entering is peculiar, but for practical purposes I have assumed each entry to be 7s. 6d.; and with this assumption as being equally fair to all breeds, I think I shall be able to prove that a "departure from the prize list," if "unnecessary," would be fairer than at present.

The Show has proved that Black Hamburgs richly deserve and thoroughly support a class of their own; but it has shown almost as unmistakably that the "degenerate Poles," or, in other words, "Crève Cœurs," do not deserve a class, and this experience tallies with the entries at Worcester, where also they enjoyed a class to themselves. I do not fancy they will ever become great favourites on this side of the water.

I place the various breeds according to their value as returners of money to the coffers of the Show, and will then add a few remarks.

Order of Merit.	Breed.	No. of Pens.	Prizes offered.	Amount received for Entries at 7s. 6d. each.
1	... Dorking.....	269	... \$63	... £100 7 6
2	... Cochins.....	205	... 62	... 76 17 6
3	... Hamburgs (Spangled and Pencilled).....	199	... 72	... 124 12 6
4	... Game.....	350	... 139	... 131 7 6
5	... Bantams.....	34	... 13	... 12 15 0
6	... Black Hamburgs.....	115	... 48	... 41 2 6
7	... Spanish.....	23	... 10	... 8 12 6
8	... Poland.....	71	... 34	... 26 12 6
9	... Malays.....	47	... 39	... 17 12 6
10	... Crève Cœurs.....	10	... 10	... 3 15 0
11	... Crève Cœurs.....	7	... 10	... 2 12 6

It is evident from these figures that if the Judges had had power to award additional prizes, the Dorkings most richly deserved it. I have never shown, and probably never shall show this breed. I, therefore, cannot be accused of partiality here; but every unprejudiced eye must see at a glance that this breed deserves still greater encouragement at Birmingham. This might be done either by intermediate prizes of £4 10s., £3 10s., &c., or by making a number of prizes of the same amount, the honour of being third or fourth being all the difference. If the Committee simply acknowledge the justice of these remarks, they may work the remedy in any way they think best.

No. 2 and No. 4 I will consider together. They have this in common that private individuals added cups of value, and thus increased, we may suppose, the competition. These amounts I have not added to the prizes offered. Were I to add it, Hamburgs would then become second, and Bantams fourth, in order of payers. Both Game and Cochins are well encouraged at Birmingham, and they have responded

fairly. The Brahmas scarcely return their amount. They are not treated as they should be, and accordingly the catalogue does not contain the names of several successful breeders—Messrs. Priest, Wright, Hinton, and Pigeon, for instance, are absent. Possibly they feel as I do, that the Brahmas do not receive sufficient encouragement. Taking 1863 as my guide, they pay Birmingham vastly better than Spanish, yet they have only two prizes in each class. The two varieties compete together, so that the light birds are almost excluded from the prize list. They might be allowed a "two hens or pullets" class, or a "cock and one hen," and the Committee, I firmly believe, would be the gainers. The amount offered to Polands is greatly beyond their returns. One of the prizes in each class might be saved.

What shall I say of Malays? The returns are pitiful, and yet who would wish them excluded? Would the Show be perfect without them? I would suggest dividing the amount into three prizes instead of two; the fact being, that these prizes are gained chiefly either by Mr. Ballance or Mr. Sykes, whose birds are most decidedly of very different strains, and their relative positions dependant on the Judges selected. Possibly, then, others might also notice this noble breed.

The Crève Cœur makes a still more piteous appearance than the Malays. My slight experience of them is not in their favour, and one breeder who had been tolerably successful with them has parted with his, or was anxious to do so. I repeat that they do not appear to me likely to take much hold on English breeders. Time will show. Meanwhile, their entries at Worcester and Birmingham prove they do not at present merit a class to themselves.

I hope to forward you my analysis of Darlington in the course of a few days.—Y. B. A. Z.

P.S.—I thought experience had proved that it was unwise to show two "Game ladies" together. Hence shows adopted "cock and one hen" classes. Then why classes for two hens or pullets?

CAPTAIN HEATON, MR. HINDSON, AND THE BIRMINGHAM SHOW.

WITH reference to certain letters which have appeared in THE JOURNAL OF HORTICULTURE, stating that Captain Heaton and others were admitted into the poultry bay at Bingley Hall during the time the Judges were making their awards, we are informed by the Secretary that such was not the case, no person whatever being admitted to this part of the building until after the Judges had completed their duties. Captain Heaton did not enter Bingley Hall, until some time after the Judges had given in their awards in the Cochins classes.

[The above has been sent to us by the Council of the Birmingham Cattle and Poultry Show; and Mr. Lythall, the Secretary, adds, that Mr. J. H. Williams, in whose name Mr. Hindson's Game fowls were exhibited, is the Mayor of Welshpool. We never suspected Capt. Heaton of influencing the Judges in their decisions; but the complaint made is, that he and others were admitted into the poultry department in direct violation of the Society's rule 17, and especially of that part which precludes the public from being present whilst any part of the judging is proceeding.

With regard to the Mayor of Welshpool, he appears to be the guilty party in exhibiting falsely another person's Game fowls as his own; and, if so, we agree with Mr. Hindson in thinking that "his situation in life should have made him above such a scandalous action."

I HAD quite made up my mind not to reply to any more anonymous correspondence; for I have but a poor opinion of a man who attacks another under the protection of an assumed name; but I think the letter of Mr. Manning requires an answer from me—first, because he tells me in a straightforward manner that he considers I have committed an error; and, secondly, because he imagines that I wilfully broke one of the regulations of the Birmingham Show. To justify my conduct with the public, and to prove that the Birmingham Committee never attempted to show any favour towards me, I beg to state the circumstances under which I viewed the poultry on the Saturday evening exactly as

they happened; and I trust, by so doing, I shall convince your readers that I am not the dreadful culprit that some would have them believe.

I was one of those who paid 10s. to see the cattle judged. About six o'clock (the Judges having completed their awards), whilst I was talking to one of the Committee, I heard him give an order to the policeman in charge of the entrance to the poultry department to admit all who wished to look at the fowls. I saw numbers enter the room; and, having heard a distinct order given from one in authority, I did not consider (nor do I now), that I was breaking any rule, or taking an unfair advantage of others in following those who had gone before me. The order from the Committee did not emanate from any request of mine. It is not my intention to reply to the remarks of my poetical friend "SMALL FRY;" for, were I to do so, I should widen the breach rather than heal it. I must now leave you and your readers to decide if I am guilty of the faults laid to my charge.—HENRY HEATON.

I AM obliged for the insertion of my letter, and also Mr. Smith's, refuting the charge insinuated in a previous article on the Birmingham Show. Unfortunately, however, your concluding commentary would seem to imply that there was collusion of some nature; and from this I can scarcely think you have given either of the letters inserted an attentive perusal. You say, "It is unfortunate Mr. Hindson did not announce his discovery until after one of the public had detected the fact." This is met by the assertion in my letter that I was the first to make, as well as the first to announce, the discovery that the birds were my own and exhibited without my knowledge or consent, and this assertion is corroborated by Mr. Smith in his letter. Surely such a satisfactory statement, so respectably and emphatically verified, should have protected me from any implied aspersion? As to who Mr. Williams is, I can only give you hearsay information, as I am unacquainted with this person, and have no desire to cultivate an intimacy with him; but I am told he either now holds, or has held, the position of Mayor of Welshpool. I trust this rejoinder will clear all doubts upon the subject.—JOSEPH HINDSON, Barton House, near Liverpool.

THAT the awards to three of the pens of Game fowls at Birmingham this year have caused more astonishment and animadversion than all the others put together will be acknowledged by those amateurs present at Bingley Hall on November 30th, and probably by hearsay from many others who had not the opportunity of then seeing them. One fact connected with this case seems now quite overlooked, but at the time it was not only a most prominent one, but such also as in the opinion of those present threw a strong light on the subject. It, however, still remains unexplained—all three of these Game cocks in the afterwards "disqualified" pens were marked alike in the nostrils, and, after the most careful examination by a host of amateurs of every other pen containing a Game cock throughout the whole Show, there proved not a single cock among the others similarly marked. It seems, at least, on the first blush of the thing, as somewhat remarkable that a fact so obvious to strangers in these three fowls, should be quite passed over without instant detection by Mr. Hindson their owner. Perhaps, therefore, that gentleman will explain this for the benefit of a poultry amateur who never yet exhibited a—GAME COCK.

IN the last Number of your Journal you say it is to be regretted that Mr. Hindson did not declare the birds to be his before the fact was discovered by one of the public. I should readily admit the force of this remark if it were true. But is it true? You do not say when the discovery you refer to was made; but unless it was previous to the opening of the Show on the Monday morning, it was not before Mr. Hindson had supplied the information upon which these pens were disqualified. It is true some little delay occurred before there was a public announcement that the prizes had been cancelled; but as this delay was not occasioned by any hesitation or reluctance on the part of

Mr. Hindson, it is rather hard that it should be made the ground of an inference against him.

Your inquiries about Mr. Williams I am quite unable to answer. I neither know who he is nor by what means he became possessed of these fowls. I should, however, be surprised to learn that there is any truth in the report you refer to—that he is a person under the control of Mr. Hindson; and, until some proof is produced on this point, I must take the liberty of disbelieving that such is the case.

But let this be as it may, the real vital question is—Were these fowls sent to Birmingham with Mr. Hindson's knowledge or consent? If it can be proved they were, I should be the first to admit that no defence, or even extenuation, is possible; but if, as I believe, they were obtained from the person who had charge of them without Mr. Hindson's authority, the imputations cast upon him are unjust, and ought to be retracted.

I never saw Mr. Hindson until I met him at Birmingham, and I have no motive, except a regard for what is just and fair, in offering my testimony on his behalf.

I believe he performed his duties with ability and conscientiousness; but I declare my conviction that he is free from all reproach in this matter, because what I know of his conduct in reference to these prizes is entirely inconsistent with any other supposition.—J. H. SMITH.

MANCHESTER EXHIBITION OF POULTRY.

THE Poultry Show at Manchester being one of the last if not the very last show of the kind that takes place in the year, is always looked forward to with great interest by exhibitors. This year it formed no exception to those previously held, for not only was there a good general competition, but certainly the attendance of amateurs was also numerically strong. A great feature of the Poultry Show thus annually held at the Belle Vue Zoological Gardens is this, the proprietors never leave anything connected with their exhibition to be carried out by others, unless under their own immediate supervision, and it is but common justice to add, that nearly the whole of the actual labour is cheerfully undertaken by the Messrs. Jennison, as a task to be personally fulfilled. To this very cause may be attributed no small amount of the Manchester Show's success, and the absence of most of those errors that oftentimes arise in those instances where such matters fall only into the hands of underlings. It is known to many of our readers that the large hall in connection with this establishment is appropriated for the time being entirely to the purposes of the Poultry Show. A more commodious and well-lighted edifice for a poultry exhibition could not be devised than the one referred to; and it is well just to name, that by no means the least advantage is the fact, that the whole is properly heated in case of any sudden requirement, as was the case this year the first day, from stress of weather. A Dog Show is held simultaneously, and the care bestowed on this department is equally worthy of commendation, though, perhaps, somewhat digressive from matters connected with poultry. On the morning at an early hour, before the Judges awarded the premiums to the dogs, every dog was carefully permitted to exercise itself in the open air under the care of an appointed attendant, which the dogs evidently much enjoyed, and thus when the Arbitrators proceeded to their duties the animals seemed far more comfortable and at home than we usually find with dogs when first tethered in strange places. Their rooms were also properly heated. It is these little acts of attention that tend so much to make shows of any description successful, and we proceed at once to notice the poultry particularly.

The Silver-Gray Dorkings were certainly not nearly so good as might have been fairly anticipated; in the class for adults there being not a pen to be called a really good one—so much so, that the Judges must have strained their forbearance considerably to award the prizes at all. We admit the first-prize pen to be the best of them; but really their condition was the very opposite of good, the cock's comb dropping down over the eye more so than any bird's of the breed we ever met with; but the other competing pens were all of them very faulty in colour of plumage. It is

Dorkings should be so badly represented, for they are not only useful, but decidedly one of the most attractive varieties (when truly bred), of any of the Dorking family. The Coloured Dorking classes and the White ones made ample amends for previous shortcomings. It is hopeless to wish for better than the Coloured exhibited by Viscountess Holmsdale, which were rosy-combed ones, and yet by no means of coarse character. The great fault of the White Dorkings arose from the monstrous deformities of the combs in the cocks; still, as before said, this breed of birds was at least equal to those formerly shown. It is essential for amateurs to see that the entries are perfectly correct, as at Manchester several pens of the best of the Dorkings were disqualified from being exhibited in the wrong classes.

The Black Spanish fowls, for which no less than six classes appeared in the Manchester prize schedule, were really a chief feature of the Show, and produced a large entry of the best of birds. Some of the hens, particularly, were of first-rate excellence.

In the Cochins classes for Cinnamon and Buff, Capt. Heaton left a very slight sweeping of premiums for his rivals. This gentleman, it will be seen by reference to the prize list, secured no less than five first prizes out of the six offered for Buffs—a most extraordinary occurrence in these days for any one yard. The winners at the recent Show at Darlington are now added to Capt. Heaton's stock, so that with proper care and attention not only may he challenge present competition, but doubtless will be hard to beat in future years also, providing the proper mating of his immense stock for breeding purposes be judiciously carried out. Certain it is no one breeder has so many high-class Buff Cochins in his possession at the present moment as Capt. Heaton. The Brown and Partridge-coloured Cochins were of quite average merit and formed a good collection. The White Cochins were perfect, Messrs. Dawson and Whitwell showing such as would prove a pride to any meeting.

The Brahmas were not so good as hoped for, and the Malay classes were absolutely without a single entry in any of the four classes appropriated to them.

Some capital Polands were shown so far as only two pens were concerned, but the Polish did not muster even half a dozen pens in the whole.

The Game classes have rarely been excelled, and the competition was great.

The Hamburgs were best among the Spangled varieties, the Pencilled not being so perfect in markings as they should be. The Geese, Ducks, and Turkeys were magnificent throughout.

In the class for ornamental water fowls, the proprietor of the gardens had a really well-filled class of entirely his own birds, and this class was one of the most attractive to sight-seers of any in the Show. Among them were admirably plumaged specimens of the Bean, Barnacle, and Bantam Geese, and by no means less worthy Carolina Ducks, Pintails, Widgeon, Teal, Shell-drakes and Call Ducks, yet the gardens themselves seemed still as well stocked as ever, the quantity kept by the Messrs. Jennison being beyond the credence of those who have not yet visited Belle Vue. As there was no competitor, Messrs. Jennison's prizes must literally have walked out of one pocket into the other.

The entries for Turkeys were small, but the quality was excellent.

The feeding and watering of the poultry was most methodically carried out, and the Manchester Show proved not to have lost interest. The show of Pigeons was better than any that has taken place before under the auspices of this Society.

DORKINGS (Silver Gray).—First, R. D. Holt. Second, J. K. Fowler. Cock.—First, F. H. Taylor. Chickens.—First, T. Statter. Second, R. D. Holt. Highly Commended, Lady Bagot. Cockerel.—First, Lady Bagot. Second, T. Statter. Pullets.—First, E. Leech. Second, J. Robinson. Commended, T. Statter.

DORKINGS (Coloured, except Silver Gray).—First, Viscountess Holmsdale. Second, Capt. Horaby. Highly Commended, Sir St. G. Gore, Bart. Cock.—First, J. Robinson. Second, C. Priest. Highly Commended, Sir F. S. Arkwright. Commended, A. Fotts. Hens.—First, Sir St. G. Gore, Bart. Second, Miss S. J. Smith. Highly Commended, Mrs. T. T. C. Lister. Chickens.—First, Viscountess Holmsdale. Second, Capt. W. Horaby. Highly Commended, Sir St. G. Gore, Bart. Commended, Mrs. T. T. C. Lister. Cockerel.—First, E. Tudman. Second, C. Priest. Highly Commended, J. Smith; F. Shaw. Commended, Rev. E. Cadogan. Pullet.—First, C. Priest.

DORKINGS (White).—First, J. Robinson. Second, W. T. Everard. *Cock*.—Prize, J. Robinson.

CRÈVE CŒUR.—Prize, W. Blakthorn, jun.

SPANISH.—First, Viscountess Holmesdale. Second, J. Garlick. Highly Commended, E. Brown. *Cock*.—First, Master J. T. Smith. Second, S. B. Hyde. Highly Commended, H. Lane; J. R. Rodbard. *Hens*.—First, H. Lane. Second, J. R. Rodbard. Highly Commended, S. H. Hyde; J. Smith. Commended, W. Cannan. *Chickens*.—First, J. Garlick. Second, D. Parsley. Third, Viscountess Holmesdale. Highly Commended, S. Robson. Commended, J. Smith. *Cockers*.—First, J. R. Rodbard. Second, J. L. Lowndes. Third, C. Cayford. Highly Commended, D. Parsley; H. C. Mobbs. Commended, H. Lane; J. Potter; J. Garlick. *Pullets*.—First, H. Lane. Second, J. Biggar. Commended, E. T. Holden; D. Parsley.

COCHIN-CHINA.—First, Capt. Heaton. Second, T. Stretch. Highly Commended, C. T. Bishop; G. Fell. Commended, E. Musgrove. *Cock*.—First, T. Stretch. Second, H. Bates. *Hens*.—First, Capt. Heaton. Second, E. Adams. Commended, C. T. Bishop; D. Causar. *Chickens*.—First, Capt. Heaton. Second, C. T. Bishop. *Cockers*.—First, Capt. Heaton. Second, E. Musgrove. *Pullets*.—First, Capt. Heaton. Second, G. Gilbert.

COCHIN-CHINA (Brown and Partridge-feathered).—First, T. Stretch. Second, E. Tudman. *Cock*.—First, T. Stretch. *Hens*.—First, E. Smith. Second, E. T. Holden. *Chickens*.—First, E. Tudman. Second, T. Stretch. *Cockers*.—First, J. Shorthose. Second, J. Wright. Highly Commended, Master W. H. Kershaw. *Pullets*.—First, C. Kershaw. Second, J. B. Walshaw.

COCHIN-CHINA (White).—First, W. Dawson. Second, G. C. Whitwell. Highly Commended, K. Chas. *Cock*.—Prize, J. Biggar. *Chickens*.—Prize, R. Chase. *Cockers*.—Prize, J. Biggar.

BEARNA POOTRA.—First, H. Lacy. Second, C. Priest. *Cock*.—Prize, J. Pars. *Chickens*.—First, H. Lacy. Second, M. Hedley. *Cockers*.—First, C. Priest. Second, J. Wright.

POLISH (Black with White Crests).—*Cock*.—Prize, J. Smith. *Chickens*.—Prize, J. Smith.

POLISH (Silver).—*Cock*.—Prize, J. Heath.

HAMBURG (Golden-pencilled).—First, J. E. Powers. Second, J. Neville. *Chickens*.—First and Second, T. H. Ashton. Third, Captain Pars. *Cockers*.—First, M. Barter. Second, W. Kershaw.

HAMBURG (Silver-spangled).—First, Right Hon. Viscountess Holmesdale. Second, J. Robinson. *Chickens*.—First, Right Hon. Viscountess Holmesdale. Second, C. M. Boyds. Highly Commended, J. Robinson. *Cockers*.—First, J. Robinson. Second, T. W. Walsh.

HAMBURG HENS (Pencilled).—Prize, C. W. Brierley. *Pullets*.—First, Rev. T. L. Fallowes. Second, W. Bothwell. Highly Commended, J. Morris.

HAMBURG (Golden-spangled).—First, J. Robinson. Second, I. Davies. *Cock*.—First, H. W. B. Berwick. Second, G. Brook. *Chickens*.—First, N. Marlor. Second, C. Broadbent. *Cockers*.—First, S. H. Hyde. Second, W. Kershaw.

HAMBURG (Silver-spangled).—First, W. Cannan. Second, T. Dale. *Cock*.—First and Second, W. Stephens. *Chickens*.—First, Right Hon. Viscountess Holmesdale. Second, T. H. Ashton. Commended, J. Robinson. *Cockers*.—First, W. Hargreaves. Second, P. Swindells. *Hens*.—First, Rev. W. Sarjeantson. Second, H. W. B. Berwick.

HAMBURG (Spangled).—First, W. W. Nicholls. Second, Rev. T. L. Fallowes.

GAME (Black-breasted Reds).—First, S. Matthew. Second, M. Billing, jun. Third, Mrs. Hay. Highly Commended, F. Sales. *Cock*.—First, C. Chaloner. Second, H. M. Julian. Third, J. J. Cranidge. Highly Commended, J. Sunderland, jun.; M. Billing, jun. Commended, K. Haver. *Chickens*.—First, M. Billing, jun. Second, W. T. Everard. Third, J. Halsall. Commended, K. Parkinson; C. Stubbs. *Cockers*.—First, M. Billing, jun. Second, J. Stubbs.

GAME (Brown and other Reds, except Black-breasted).—First, T. Robinson. Second, H. Adams. *Cock*.—First, C. Chaloner. Second, W. Boyes. Third, W. Whitwell. Highly Commended, M. Billing, jun. Commended, T. Statter; M. Billing, jun. *Chickens*.—First, Mrs. Hay. Second, W. Cople. Third, W. Whitwell. Highly Commended, S. Matthew; T. Statter; Mrs. E. Bennett. Commended, J. Wood. *Cockers*.—First, E. Bowers. Second, T. Statter. Commended, J. Wood.

GAME HENS.—First, W. Boyes. Second, H. Adams. Highly Commended, A. Woods; E. Aykroyd; M. Billing, jun. *Pullets*.—First, C. W. Brierley. Second, G. Clements. Third, M. Billing, jun. Highly Commended, E. Aykroyd; Mrs. S. J. Whitham; G. Clements. Commended, T. W. Redhead.

GAME (Duckwings and other Greys and Blues).—First, S. Matthew. Second, W. Boyes. Commended, H. Adams. *Chickens*.—First, J. Halsall. Second, W. T. Everard. Third, E. Aykroyd. Highly Commended, J. Holme.

GAME (except Black-breasted and other Reds).—First, E. Aykroyd. Second, M. Billing, jun. Highly Commended, H. Adams; E. Needham. *Chickens*.—First, W. T. Everard. Second, M. Billing, jun.

GAME (Black and Brassy-winged, except Greys).—Prize, M. Billing, jun. *Chickens*.—Prize, H. M. Julian.

GAME (White and Pile).—First, M. Billing, jun. Second, T. West. Highly Commended, S. Matthew; H. Adams. Commended, Mrs. S. J. Whittham. *Chickens*.—First, T. West. Second, M. Billing, jun.

GAME HENS (except Black-breasted and other Reds).—First, H. Adams. Second, J. Goodwin. *Chickens*.—First, T. West. Second, W. T. Everard.

GAME BANTAMS (Black-breasted and other Reds).—First, E. W. Crawford. Second, Sir St. G. Gore, Bart. Third, J. Munn. Highly Commended, E. Musgrove. Commended, G. Martin.

GAME BANTAMS (Any other variety).—Prize, C. W. Brierley. *Pullets*.—First, E. A. Crawford. Second, J. Garlick.

GAME BANTAM COCK.—First, C. W. Brierley. Second, E. Musgrove. *Cockers*.—First, J. W. Morris. Second, J. Shorthose.

BANTAMS (Silver-laced).—Prize, R. Chase. *Chickens*.—Prize, J. W. Morris.

BANTAMS (White, Clean-legged).—Prize, F. Marten. *Chickens*.—Prize, Sir St. G. Gore, Bart.

BANTAMS (Black, Clean-legged).—Prize, Miss K. Charlton. *Chickens*.—First, Miss K. Charlton. Second, Mrs. F. Husey-Freke.

BANTAMS (Any other variety).—Prize, F. Marten.

BANTAMS (except Game Bantams).—Prize, C. W. Brierley.

DUCKS (White Aylesbury).—First, Sir St. G. Gore, Bart. Second, J. K. Fowler. Highly Commended, J. Pratt; J. Smith. Commended, J. K. Fowler.

DUCKS (Rouen).—First, S. Shaw. Second, W. Capple. Third, J. Holme. **DUCKS (Black East Indian).**—First, F. W. Karla. Second, J. R. Jansz. **DUCKS (Any other variety).**—First, C. P. Askars. Second, T. Wakefield. **ORNAMENTAL WATER FOWLS.**—First, Second, Third, Highly Commended, and Commended, J. Jennison.

GREYS (White).—First, W. Kershaw. Second, J. Southern. Highly Commended, J. K. Fowler. Commended, J. Brundrett, jun.

GREYS (Grey and Mottled).—First, J. K. Fowler. Second, J. Southern.

TURKEYS.—Prize, J. Smith. Commended, Mrs. E. Skerrett. *Poult.*.—First, J. W. Smith. Second, Rev. W. Serjeantson. Highly Commended, Mrs. E. Skerrett. Commended, J. Smith.

EXTRA STOCK.—First, R. F. Goodwin (Black Hamburg). Second, W. Nicholls (Black Hamburg).

PIGEONS.

THE collection of Pigeons, although not numerous, was exceedingly choice. In *Pouters* Mr. Eden had a very easy victory with his fine Whites and Blues. *Carriers* were excellent, Messrs. Eden and Elze taking all the prizes; the most noticeable being the Duns and wonderful Black cock of the former, and Mr. Elze's remarkably fine Black Hen. In *Dragoons* good Blues were first and Yellows second. In *Jacobins* Mr. Esquilant was first with a very small fine pair of Reds; and Mr. Lawrence's excellent Yellows were second, reversing the late Birmingham decisions. In *Nuns* the Black-headed variety took the prize. In *Bards* Mr. Eden was first with a promising pair of young Blacks, and also received high commendations for a like pair. Mr. Sanday took second with Blacks also, one of which was so much affected in the head as to be out of place in an exhibition-pen, and unlikely to reach home alive. In *Turbits* Mr. Shaw had first with a good pair of Reds in splendid condition; Blues taking second. *Owls* formed one of the best classes in this department, good Whites taking both prizes. In *Trumpeters* Mr. Oates struggles manfully with his capital Whites, always well shown, but has to succumb to Mr. Shaw's magnificent Black Mottles whenever they put in an appearance. As on many previous occasions the above-named again occupied the respective positions of first and second; and Mr. Shaw has reason to be proud of his really wonderful pair. In *Fantails* it seems to be the humour of the "ruling powers" to prefer Crested birds. A short time ago this variety merely received "high commendation as Indians." The present instance was no exception to late decisions. No doubt they were excellent in tail, but the smallness, extraordinary grace, and symmetry of some of the Smooth-headed kind is wanting. In *Almond Tumblers* the late Birmingham decisions were reversed, Mr. Eden having both prizes, while Mr. Elze's were very highly commended. The second-prize pen were rather unevenly matched, though good in other respects. *Balds* were good, Mr. Esquilant having both prizes with Blues. In *Beards* Messrs. Fielding and Esquilant divided the prizes with fine Blues. Any other *Variety Tumblers* was a good class, both prizes being awarded to Mr. Eden's very fine Black Mottles. In any other new or distinct breed, Mr. Yardley added another to his list of prizes with his well-known Satinettes; a beautiful pair of Isabells taking second, and Hyacinths were commended. A pair of Black-tailed Owls were again tried in this class, and were passed over unnoticed. It would seem that the Arbitrator coincides with our remarks on the Birmingham Show—that the birds in question are improperly classified.

POUTERS.—First and Second, P. Eden.

CARRIERS (Black Cock).—First, P. Eden. Second, F. Elze. Very Highly Commended, J. Wadsworth; P. Eden. *Cock of any other Colour.*—Prize, P. Eden. *Hen (Black).*—First, F. Elze. Second and Highly Commended, P. Eden. *Hen of any other Colour.*—Prize, P. Eden. Commended, J. Birch.

DRAAGONS.—First, J. Percival. Second, F. Esquilant. Commended, J. Wadsworth; F. Mangnall.

JACOBIANS.—First, F. Esquilant. Second, J. T. Lawrence.

NUNS.—Prize, T. Ridpath.

BARDS.—First, P. Eden. Second, G. H. Sandy. Highly Commended, P. Eden. Commended, S. Shaw.

TURBITS.—First, S. Shaw. Second, H. Mageon. Commended, M. E. John.

OWLS.—First, J. Fielding, jun. Second, G. H. Sanday. Commended, H. Yardley.

TRUMPETERS.—First, S. Shaw. Second, W. H. C. Oates.

FANTAILS.—First, H. Yardley. Second, J. W. Edge. Commended, T. Ridpath.

ALMOND TUMBLERS.—First and Second, P. Eden. Very Highly Commended, F. Elze.

BALDS.—First and Second, F. Esquilant.

TUMBLERS (Any other variety).—First and Second, P. Eden. Commended, W. Woodhouse; J. Fielding, jun.

BEARDS.—First, J. Fielding, jun. Second, F. Esquilant.

ANY OTHER NEW OR DISTINCT VARIETY.—First, H. Yardley (*Satinettes*). Second, the Countess of Derby (*Isabells*). Commended, J. Chatham (*Hyacinths*).

RABBITS.—*Black and White.*—Prize, G. F. Greensill. *Yellow and White.*—First, G. Wood. Second, R. I. Anson. *Tortoiseshell.*—First, G. F. Greensill. Second, H. Handford. *Blue and White.*—Prize, G. South, jun. *Grey and White.*—First, H. Handford. Second, A. Firth. *Self Colour.*—Prize, G. Jones. *Longest Ears.*—Prize, R. I. Anson. *Foreign.*—Prize, J. Buchanan.

JUDGES.—*Poultry:* Dorking, Crève Cœur, Spanish, Cochon China, Brahma Pootra, Malay, and Polish Fowl—Mr. Hewitt, Birmingham; Mr. Teebay, Preston. *Hamburgh, Bantam, Ducks, Geese, Turkeys, and Extra Stock.*—Mr. Douglas, London; Mr. Leno, Dunstable. *Game.*—Mr. Challoner, Chesterfield; Mr. Sutherland, Burnley. *Pigeons:* Dr. Cottle, Cheltenham. *Rabbits:* Mr. Owen, London.

SCOTTISH ORNITHOLOGICAL ASSOCIATION.

THE fifth annual Exhibition of Pigeons and Canary birds, under the auspices of this Association, was held on the 18th and 19th inst., at the Rifle Hall, Waterloo Street, corner of Pitt Street, Glasgow. The entries were numerous, there being no fewer than 400 pens of Pigeons, and 211 cages of Canary birds, numbering about 1000 head, and forming one of the finest exhibitions of the kind ever seen in this quarter. In the Pigeon department the competition was very keen, consequent upon the large number of excellent birds which were brought forward. The entries for the silver cup consisted of very beautiful birds, which were much admired. In the Powder class the entries were more numerous than on any previous occasion, and the Pigeons were in splendid condition; indeed, the competition in all the classes entered for medals was of a very keen description. The show of Carrier Pigeons, both old and young, was also good, many birds remarkable for their beauty being exhibited. In the other classes, including Short-faced Tumblers, there was an excellent display.

The entries of Canary birds were also more numerous than last year; and amongst the collection were many really pretty birds, whose forms were faultless. Amongst the Belgian Fancy were some splendid birds; and in this class the competition was exceedingly keen. The show of Piebalds and Goldfinch Mules was much admired, the collection containing many beautifully marked birds.

The following is the list of awards:—

PIGEONS.

POWTERS (Black Cocks).—First, H. Hawkins, Belfast. Second, R. Fulton, Deptford. Very Highly Commended, J. Miller, Glasgow. Highly Commended, M. Stuart, Glasgow. Commended, G. Ure, Dundee.
POWTERS (White Cocks).—First and Second, and Columbarian Medal, G. Ure, Dundee. Very Highly Commended, J. Wallace, Glasgow.
POWTERS (Blue Cocks).—First, R. Fulton, Deptford. Second, D. Stewart, Perth. Very Highly Commended, J. Miller, Glasgow. Highly Commended, J. H. Frame, Carlisle.
POWTERS (Red Cocks).—First, H. Hawkins, Belfast. Second, J. Ruthven, Glasgow. Very Highly Commended, J. H. Frame, Carlisle. Highly Commended, J. Wallace, Glasgow. Commended, H. Brown, Sheffield.
POWTERS (Yellow Cocks).—First, J. Ruthven, Glasgow. Second, G. Ure, Dundee.
POWTERS (Cock, Any other colour).—First, W. Lightbody, Glasgow. Second, J. Wallace, Glasgow.
POWTERS (Black Hens).—First, J. H. Frame, Carlisle. Second, G. Ure, Dundee.
POWTERS (White Hens).—First and Columbarian Medal, M. Sanderson, Edinburgh. Second, G. Ure, Dundee. Very Highly Commended, H. Hawkins, Belfast. Highly Commended, G. Ure, Dundee.
POWTERS (Blue Hens).—First, J. Cochran, Glasgow. Second, J. Ruthven, Glasgow. Very Highly Commended, G. Ure, Dundee. Highly Commended, H. Hawkins, Belfast.
POWTERS (Red Hens).—First, G. Ure, Dundee. Second, G. R. Potts, Sunderland. Very Highly Commended, W. Newton, Newark.
POWTERS (Yellow Hens).—First, G. Ure, Dundee. Second, J. Huie, Glasgow. Very Highly Commended, M. Stuart, Glasgow. Highly Commended, W. Newton, Newark.
POWTERS (Hen, Any other colour).—First, J. Muir, Glasgow. Second, J. Ruthven, Glasgow.
CARRIERS (Black Cocks).—First, G. Ure, Dundee. Second, T. Colley, Sheffield. Very Highly Commended, T. Colley. Highly Commended, H. Hawkins, Belfast.
CARRIERS (Dun Cocks).—First and Columbarian Medal, J. Wallace, Glasgow. Second, T. Colley, Sheffield.
CARRIERS (Black Hens).—First and Columbarian Medal, J. H. Frame, Carlisle. Second, T. Colley, Sheffield. Very Highly Commended, G. Ure, Dundee.
CARRIERS (Dun Hens).—First, H. Holman, Plymouth. Second, F. Elze, London. Very Highly Commended, T. Short, Glasgow. Highly Commended, T. Colley, Sheffield. Commended, H. Hawkins, Belfast.
SHORT-FACED MOTTLED TUMBLERS (Any colour).—First, G. Ure, Dundee. Second, H. Martin, Glasgow. Very Highly Commended, J. Wallace, Glasgow.
SHORT-FACED TUMBLERS (Any other colour or variety).—First and Second, M. Stuart, Glasgow. Very Highly Commended, J. Stuart. Highly Commended, R. Fulton, Deptford.

Stuart, Glasgow. Second, G. Ure, Dundee. Very Highly Commended, J. Montgomery, Belfast. Highly Commended, J. Wallace, Glasgow. Commended, M. Stuart.

BARBS (Cocks).—First and Second, J. H. Frame, Carlisle.

BARBS (Hens).—First and Second, J. H. Frame, Carlisle. Very Highly Commended, J. R. Rennards, Helensburgh.

FANTAILS.—First and Silver Medal, H. Beldon, Bingley. Very Highly Commended, J. R. Jessop, Hull.

FANTAILS.—First, G. Ure, Dundee. Second, J. L. Irvine. Very Highly Commended, R. Trench, sen., Paisley.

JACOBINS.—First, R. Pickering, Carlisle. Second, J. Sharp, Johnston. Very Highly Commended, T. Short, Glasgow. Highly Commended, J. A. G. Chalmers, Glasgow.

TRUMPETERS.—First, L. M. Ewart, Belfast. Second, H. Yardley, Birmingham. Very Highly Commended, F. Key, Beverley.

TURBITS.—First, H. Yardley, Birmingham. Second, J. R. Rennards, Helensburgh. Very Highly Commended, F. Key, Beverley.

OWLS.—First, H. Beldon, Bingley. Second, J. Fielding, Rochdale. Very Highly Commended, J. H. Frame, Carlisle. Highly Commended, H. Yardley, Birmingham. Commended, R. Pickering, Carlisle.

NUNS.—First, F. Key, Beverley. Second, D. Gray, Kilbarchan. Very Highly Commended, H. Yardley, Birmingham.

MACPIES.—First, J. Percival, Peckham. Second, L. M. Ewart, Belfast. Very Highly Commended, T. Short, Glasgow.

TUMBLERS (Common).—First, A. Morrison, Glasgow. Second, M. E. Jobling, Newcastle-on-Tyne. Third, W. Weir, Glasgow. Very Highly Commended, R. Pickering, Carlisle. Highly Commended, J. Fielding, Rochdale.

OTHER BREEDS.—First, J. Huie, Glasgow. Second, G. Ure, Dundee. Third, M. E. Jobling, Newcastle-on-Tyne. Very Highly Commended, M. E. Jobling. Highly Commended, G. Jeffrey, Edinburgh. Commended, J. Ruthven, Glasgow.

EXTRA PRIZES.

Three pens Fantails, Jacobins, Trumpeters, Turbits, Owls, Nuns, and Macpies.—First (Silver Cup), G. Ure, Dundee. Very Highly Commended, J. R. Rennards, Helensburgh. Highly Commended, F. Elze, London. Commended, J. H. Frame, Carlisle.

POWTERS (Black).—First (Silver Medal), G. Ure, Dundee. Very Highly Commended, G. Jeffrey, Edinburgh. Highly Commended, T. Short, Glasgow.

POWTERS (White).—First (Silver Medal), G. Ure, Dundee. Very Highly Commended, M. Sanderson, Edinburgh. Highly Commended, G. Ure, Dundee.

POWTERS (Blue).—First (Silver Medal), M. Stuart, Glasgow. Very Highly Commended, G. Ure, Dundee. Highly Commended, J. Miller, Glasgow.

CARRIERS (Any colour).—First (Silver Medal), H. Hawkins, Belfast. Very Highly Commended, G. Ure, Dundee. Highly Commended, R. Pickering, Carlisle.

ALMOND TUMBLERS (Short-faced).—First (Silver Medal), M. Stuart, Glasgow. Very Highly Commended, J. Crawford, Glasgow.

BARBS (Any colour).—First (Silver Medal), J. H. Frame, Carlisle. Very Highly Commended, D. Stuart, Perth. Highly Commended, M. E. Jobling, Newcastle-on-Tyne. Commended, P. H. Jones, London.

CANARIES.

Pair Scotch fancy, the produce of 1862, or prior thereto.—First (handsome piece of silver plate); and, Second, G. Masterton, Glasgow.

SCOTCH FANCY.

YELLOW COCKS.—First, T. Buchanan, Glasgow. Second, A. Wilson, Wishaw. Third, S. Brown, Glasgow. Fourth, W. M'Leod, Glasgow.

BUFF COCKS.—First, G. Ayrton, Glasgow. Second, J. Mitchell, Perth. Third, G. Binnie, Perth. Fourth, D. Stewart, Perth.

YELLOW HENS.—First, A. Wilson, Wishaw. Second, G. Masterton, Glasgow. Third, W. Ferguson, Bath. Fourth, R. M'Millan, Stevenston.

BUFF HENS.—First, D. Johnstone, Glasgow. Second, J. M'Gill, Edinburgh. Third, J. Kerr, Perth. Fourth, W. Thom, Stevenston.

BEIGIAN FANCY.

YELLOW COCKS.—First, R. Forsyth, Edinburgh. Second, T. Haddow, Glasgow. Third, J. Ruthven, Glasgow.

BUFF COCKS.—First, J. Huie, Glasgow. Second, W. Forrest, Edinburgh. Third, J. Edington, Leith.

YELLOW HENS.—First, Mrs. Clark, Glasgow. Second, J. Beeby, Carlisle. Third, J. Henderson, Kendal.

BUFF HENS.—First and Second, J. Huie, Glasgow. Third, R. Ruthven, Glasgow.

PIEBALDS.

YELLOW COCKS.—First, C. McWilliam, Glasgow. Second, H. Fisher, Glasgow. Third, W. Wilson, Mauchline.

BUFF COCKS.—First, A. Wilson, Wishaw. Second, J. Johnston, Glasgow. Third, N. M'Lean, Glasgow.

YELLOW HENS.—First, T. Law, Newarthill. Second, J. Fulton, Bath. Third, H. Newall, Glasgow.

BUFF HENS.—First, J. Binning, Hamilton. Second, J. Armstrong, Glasgow. Third, R. White, Paisley.

GOLDFINCH MULES.

YELLOW COCKS.—First, W. Kirk, Dunfermline. Second, J. Hamilton. **BUFF COCKS.**—First, T. Buchanan, Glasgow. Second, W. Kirk, Dunfermline.

GOLDFINCHES.

First, T. Adam, Paisley. Second, R. Paterson, Glasgow. Third, G. Hamilton, Hamilton.

The following gentlemen officiated as Judges:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

THE FOLLOWING GENTLEMEN OFFICIATED AS JUDGES:—For Pigeons: E. L. Corker, Esq., Croydon, Surrey; and D. Wostenholme, Esq., Gray's Inn Road, London. For Canaries: Messrs. James Graham, Kilmarnock; Thomas Pate, Bath; Robert Crawford, Kilbirnie; George Masterton, Thos. Haddow, and George Horsburgh, Glasgow.

holding an exhibition of Canaries, British and Foreign Birds, &c., at the Mechanics' Hall, Derby, on the 15th and 16th of next month. Derby, there can be little doubt, presents facilities for such an exhibition second to none in the kingdom, as it enjoys railway communication with all parts and is pretty centrally situated.

MR. ALFRED HEATH'S ISABEL POWTERS.

BRING last week on a visit near Calne, I inquired for the residence of Mr. Alfred Heath; for having read in this Journal an account of his Isabels or Isabel Powters, I had a curiosity to see the same. I fortunately found Mr. Heath at home; he most readily and kindly showed me his birds, and I spent some time very pleasantly (for in the country a pigeon-fancier seldom meets with a brother), in examining the whole of his stock.

In regard to the Isabels, there can be no doubt that they are Powters. As one pair was recently sold by Mr. Stevens, Mr. Brent if not the buyer, probably saw them, and was confirmed in his opinion that they are Powters, as undoubtedly they are, and nothing less or more. They have a very refined and delicate look, and I could not, when seeing them, sever from my mind the idea of the Collared Turtle Dove (*Columba risoria*), possibly this arose from their colour only. They also struck me as being admirably suited for an aviary, or where birds are kept confined, being just the Pigeons to be ladies' pets, and the nearer view you get of them the prettier they are, their elegant cream colour, to be fully appreciated, demanding a close inspection. The very full development of the crop in the hen is worth notice, and the thoroughly feathered state of their legs. On the whole, prettier, more slender-shaped, and more elegant Pigeons I never saw, and though Powters, yet among a number of those birds my eye fell upon them at once, for beauties of their own. Their frequently producing white or nearly white young ones, looks, I fancy, as if they were originally bred from a white Powter and another Pigeon, could it be the *Columba risoria*? I once saw a young bird, but which died, bred from a hen Dove and a very small high-bred Tumbler. I believe this was the case, a schoolfellow possessed the birds and I was frequently his playmate and recollect seeing all three. After, therefore, a careful examination, I would certainly say that the Isabel Powter is a gain to our varieties of Pigeons.

One word more. We know how very small difficulties become when a man is in earnest in a pursuit or hobby. I have heard of such a man saying, "Sir, I never spell difficulty with a great D." And Spitalfields weavers with their valuable Tumblers, and Lancashire cotton operatives with their stands of fine Auriculas, show that men in pursuing recreations can make much out of scanty means. Here was Mr. Heath with a small square yard, with high buildings around—for Calne is an old-fashioned town with the streets narrow and the houses near together—yet in this small yard he manages to have on the south side, a capitally arranged pigeon-loft on the ground floor, full of valuable birds on the separate box system, each box capable of being closed, and all the birds having their freedom; there is a covered run on another side for Spanish fowls, a fountain in the middle, and a little shallow bit of clean water on the Pigeon side with its tiny jet, for the Pigeons to bathe in—and all, Pigeons and fowls, looking healthy. How Mr. Heath manages to prevent depredations from cats I cannot conceive, with such capital cat promenades all round him. Who can estimate the innocent enjoyment, in the hours of leisure from business, which that small yard and its inhabitants afford Mr. Heath?—WILTSHIRE RECTOR.

POLLEN-GATHERING AND BEES BREEDING IN DECEMBER.

—As a proof of the mildness of the winter, I may mention the following fact. Having occasion on the afternoon of Saturday, the 19th inst., to examine the roots of a wall tree immediately behind one of my hives (a Stewarton), to prevent annoyance from the bees, I ran in the sliding-door. Shortly thereafter I observed three foragers on the board anxiously awaiting admittance; and to my surprise, in each of their thigh-baskets were sparingly laden with dark-

coloured pollen, similar to what I was enabled to report collected in the end of January in the three last seasons.

While surveying the ravages of foul brood in another stock on the 17th inst., I noticed a sprinkling of newly-laid eggs. Neither hive was excited by feeding; the former was set on a ventilating eke. Fruit-buds on young pyramid pears are beginning to expand.—A RENFREWSHIRE BEE-KEEPER.

UNITING BEES.

HAVING given full particulars in page 423, of what I have found the best mode of driving a stock of bees and securing its queen, I now come to the means to be adopted for uniting the expelled workers to another colony.

If the bees to which they are to be united are domiciled in a common hive, I know no better means of effecting the desired object than that described in page 59 of the last edition of "Bee-keeping for the Many"—viz., about an hour after sunset to spread a cloth on the ground opposite the stock to which the bees are to be joined, on which cloth two sticks must be laid about 8 inches apart, then with a smart stroke dash out the bees between the sticks, and instantly, but very gently, place the stock they are intended to enter upon the sticks, leave them for the night, having first defended them from rain, should any fall, and in the morning an hour before sunrise replace the stock in its original position, and all will be peace and harmony.

Thus far Mr. Payne, and he may be, and probably will be found to be right in a majority of cases; but in many instances I have known daylight reveal a sickening scene of slaughter, so extensive as to make it more than doubtful if sufficient bees survived to render the attempted union of the slightest advantage to the stock intended to be benefited thereby.

In order to diminish as much as possible the risk of such an unwelcome catastrophe, it is a good plan to treat both parties to a copious sprinkling of sugared water scented with peppermint, which is easily prepared by means of a little ordinary peppermint water added to simple syrup. This acts as a peacemaker in a double capacity—first, by confusing their sense of smell, and by this means rendering it more difficult for them to identify one another; and, secondly, by inducing the probable belligerents to gorge themselves with food, in which state "peace at any price" is their general maxim.

When, on the other hand, the destitute family is to be united to one domiciled in either a bar or a frame-hive, I confine them towards evening by tying them up securely in a cloth, and convey them in-doors for the night. In the forenoon, or towards the middle of the next day, I remove the crown-board of the hive to which they are to be added, and temporarily deepen it above the bars by laying on it a wooden frame of the same diameter as the hive, 1 to 1½ inch in depth. This done I replace the crown-board, blow a few whiffs of smoke under it, and proceed to loosen the knots of the cloth and cord by which the expatriated unfortunates are confined. All being ready, the crown-board is once more removed, and the bees treated to a liberal dose of the scented syrup. Almost at the same moment the restraining cloth is removed from the straw hive, and a few whiffs of smoke blown on the bees clustered within. This is followed by inverting the hive, and sprinkling the cluster with scented syrup. The next instant the entire cluster is dashed on the top of the exposed bars of their new domicile, and the crown-board being replaced before the cluster has time to spread, or many bees to take wing, the junction is effected in far less time than it has taken to describe the mode in which it is managed.

When both colonies are lodged in either bar or frame-hives of similar construction in the same apiary, I remove so many combs from the sides in such hive as to reduce them to one-half their original number, looking over the remaining combs one by one so as to assure myself of the existence of a queen in one case, and removing her entirely in the other.* These objects having been attained, the remaining combs and bees of the queenless stock are lifted out and placed on

*She may be kept alive a few days in order to provide against accident, by being placed with a few of her subjects and a bit of honeycomb or barley-sugar in a small perforated box, or under a wine-glass slightly raised on one side to admit air, and kept in a warm room.

each side of the combs in the other hive; stragglers having been brushed out on the top of the exposed bars, the crown-board may be replaced, and the job is complete. The use of smoke and scented syrup is an additional safeguard against a quarrel; but as the bees usually gorge themselves with honey during the preliminary examination and removal of a moiety of the combs, I generally omit these precautions, and seldom have reason to regret the omission.

All these modes of effecting autumnal unions have been fully tested, and may be relied upon as being effectual in the great majority of cases. An occasional quarrel may sometimes arise, and it is probable that with such pugnacious and bellicose insects no mode that can be devised will entirely obviate the possibility of such a *contre temps*. When it is desired to unite common to Ligurian bees the risk is considerably increased. Still, even this may be successfully effected in the great majority of cases, if all those precautions are adopted which have been indicated by—A DEVONSHIRE BEE-KEEPER.

BEE-FLOWERS.

I CAN confirm the observations of "A RENFREWSHIRE BEE-KEEPER," that the value of *Melilotus leucantha* as a bee-flower is very much over-estimated by some writers. I had some for several years, and found that the bees frequented it so little that I discontinued growing it. Borage, on the contrary, the bees are so fond of that I have a succession of three crops during the season; the first I raise as early as possible, and the last is generally cut down with the frost, when about three parts of the flowers have come out. I also sow a succession of French poppies, which yield an immense quantity of farina, and also look very gay in the garden. On the 10th of October, my bees were so busy collecting farina from the poppies, that I counted eight bees on one flower at the same time. I never saw so many on one flower before. My bees were carrying farina into the hives on the 24th of November, which is some weeks later than the average of years.—WILLIAM CARR, Clayton Bridge Apiary, Newton Heath, near Manchester.

ACCLIMATISATION AT THE ANTIPODES.—The Acclimatisation Society of Victoria has fortunately met with very liberal support from the Government, and has been enabled to obtain a most valuable site in a reserve of 500 acres appropriated as the Royal Park. It is described as being well grassed and timbered, presenting an agreeable undulating surface, though somewhat bleak and exposed. To this spot the Society and its friends are enabled to take the animals and birds which they may import into the colony. In order to fit it for the reception of animals a sum of about £4000 has been expended. There are paddocks with sheds erected, into which the goats and llamas that feed about the park in the daytime are driven for shelter. In the 50 acres which are allotted to the Society ample arrangements have been made for dividing and classifying the live stock. Substantially-constructed cages contain pheasants and doves, and such class of birds, with shelter-cots in the centre. The water fowl have their ponds in which to disport themselves and an island on which to breed. The zebras, the elks, and the ostriches have their separate compartments; a system, in short, is provided even more complete than that which exists at the Zoological Gardens in the Regent's Park. What would, however, be a novelty, and, indeed, a matter of surprise to many persons in this country, is the care which is manifestly bestowed upon the protection of those small birds which are considered here as the general enemy of the gardener and farmer. There, sparrows, and rooks, and finches, and yellowhammers, and blackbirds, and thrushes, and linnets, and robin redbreasts, and a host of other familiar members of the feathered tribes have been brought together, and after resting from the fatigues of their voyage across the sea, they are set at liberty to breed in the country, and establish for their races a home among the wilds of Australia. The birds which have been set at liberty at the Botanical Gardens of Victoria up to the present time have been eighteen canaries, eighteen blackbirds, ten grey finches, five yellowhammers, six Californian quails, thirty

English wild ducks, thirty-five Java sparrows, four English robins, eight turtle doves, and fifty minor birds. At another point there have been located five pheasants, six skylarks, six Californian quails, four thrushes, four blackbirds, one pair white swans; at Sandhurst, four pheasants, four skylarks, and four thrushes; at Yarra, six thrushes and four skylarks; and near Sydney, seven thrushes four skylarks and ten blackbirds. The stock on hand of beast, birds, and fishes is not only interesting, as showing the value which is set upon many things held as of little worth in this country, but is, moreover, highly creditable to the managers of the Society in the colony.—(Australian and New Zealand Gazette.)

HERBIVOROUS ANIMALS AMONG YEW.

I HAVE always found in regard to the danger of yew to cattle, sheep, and horses, that in a growing state it is harmless, but when cut and withering it has killed every animal that has eaten of it (as far as my experience goes), except a goat. The goat was with the heifers which died, but I cannot say positively that it ate the yew, though we always believed it did so.—J. M. S.

[There is a decided conflict of evidence on this point. Dr. Martyn in his edition of Miller's "Gardeners' Dictionary" says:—"Some intelligent persons assert that the branches of yews while green are not noxious; but among the number of cattle that we have known fall victims to this deadly food, not one has been found when it was opened but had a lump of green yew in its paunch."]

SEEING an article on the above in your Journal of the 15th December, page 471, recalls to my memory a fact to which I can fully bear testimony. Early in the spring of 1855, I was living at Stapleford Park, Leicestershire, the seat of the late Earl of Harborough, and in the end of January, or beginning of February, a very severe frost set in, and the deer walked over the ice to a small island in the lake which was planted with some very fine yew trees; and the consequence was, that in the course of two or three days more than one hundred head of deer were poisoned by browsing on the yew. This shows that the statement you have quoted from Gilpin is not correct, although it is very possible that the poisonous effects of the yew might act with more deadly effect in consequence of the deer being starved to eat it in large quantity.—H. GENT, Lower Clapton.

[This is very important evidence. Mr. Gilpin evidently doubted the statement that deer are not poisoned by browsing on the yew, for he introduces it with "as park-keepers say."]

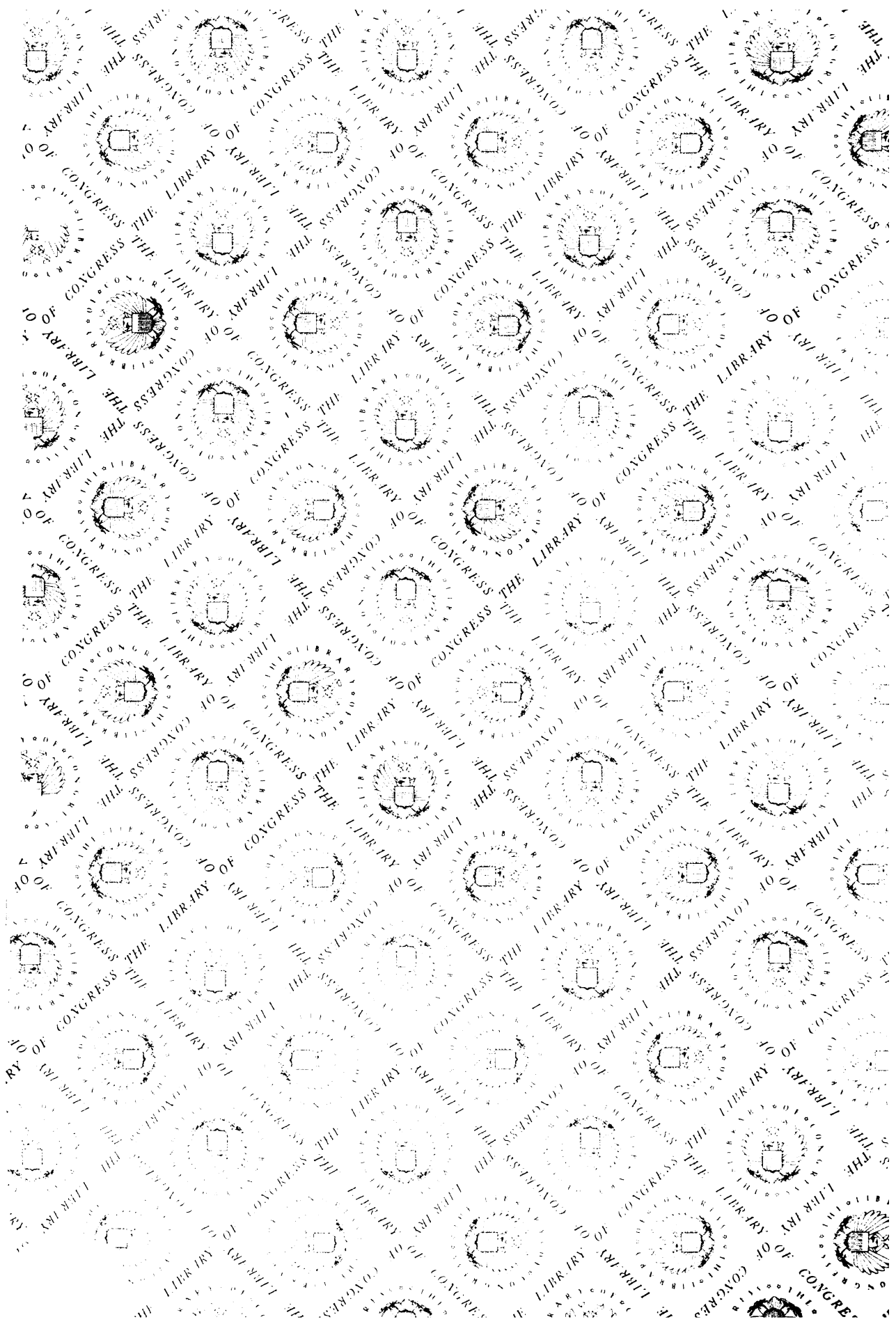
SUBSTITUTES FOR HOLLY BERRIES.—In answer to a correspondent, you say that you know of no method of dyeing peas so as to make up for a deficiency of holly berries in winter decorations, and suggest that they should be dipped in melted sealing-wax. Here in Yorkshire we use glass beads similar to the enclosed, and a very good substitute they make. They may be purchased at the wholesale toyshops, and are generally sold at a low price by the ounce.—RUSTIC ROBIN.

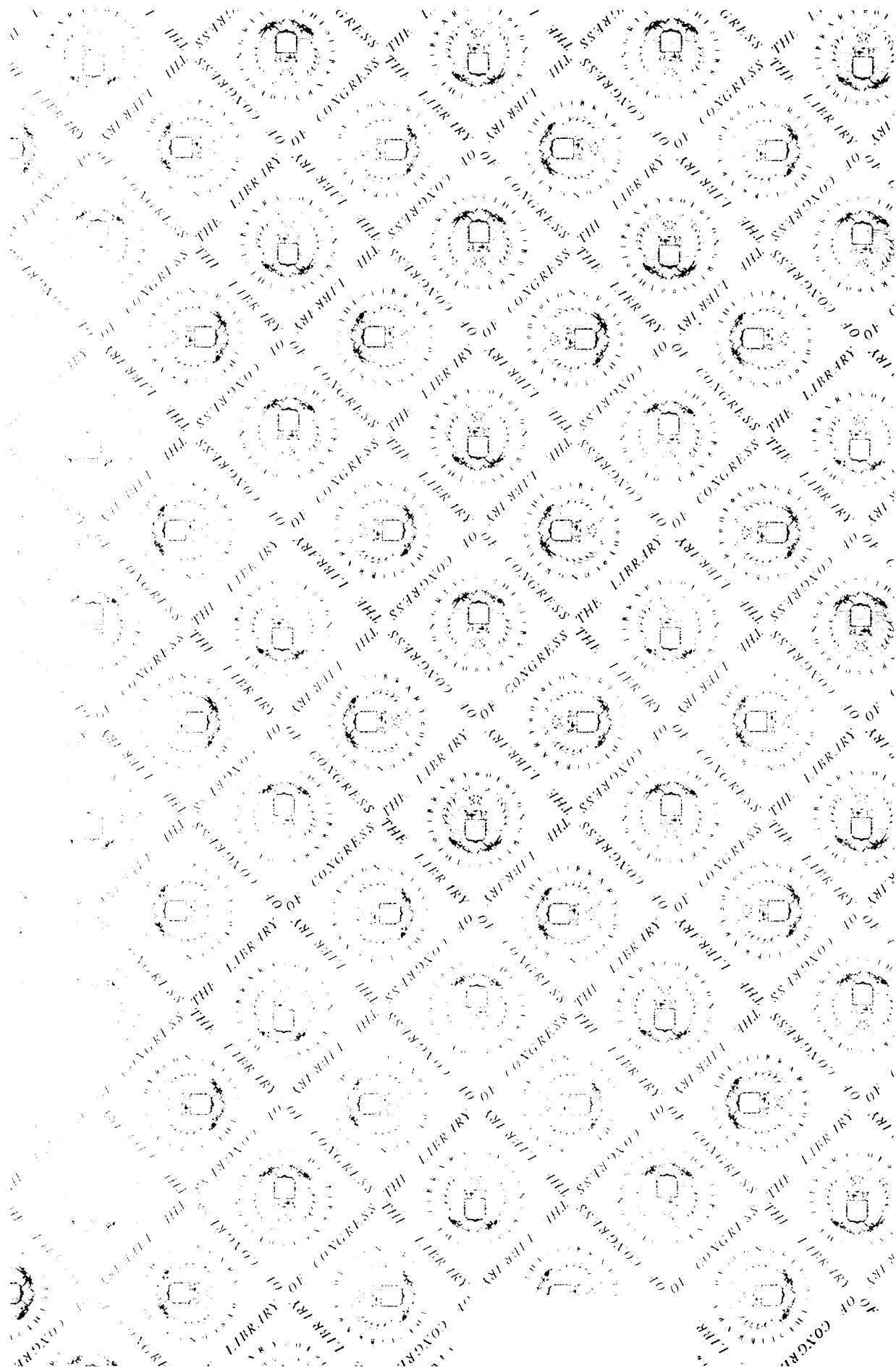
[The beads sent are of glass, coated inside with melted red sealing-wax.]

OUR LETTER BOX.

TO BREEDERS OF PARTRIDGE COCHINS.—A few amateurs propose to raise by a subscription of a guinea each (subject to 10 per cent. reduction for expenses) a fund to be awarded at the next Birmingham Show, in one prize (cup or specie) to the best pen of chickens of the above breed. This prize is to be awarded to subscribers' birds only; the prize to go in accordance with the Birmingham prize list; but should not a subscriber's birds be in the Birmingham prize list, the Judges will be requested to award this prize. The subscription will close on the 1st of March next. Subscribers' names must be sent in on or before that date to E. Tudman, Esq., Ash Grove, Whitchurch, Salop, who has kindly consented to receive the same.

NEWPORT POULTRY SHOW.—In our notice of the main features of this Show, we inadvertently stated that Lady Holmesdale had taken three first and five second prizes besides commendations, whereas the prize list indicates Lady Holmesdale to have been awarded five first prizes, independently of the one for the best collection of Poultry, and the same number of second prizes, and one third prize; such success we need hardly say, is only obtained by that good management and perseverance which Lady Holmesdale has exhibited.





LIBRARY OF CONGRESS



00026915545